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FROM PACMAN TO PORSCHE..... 94

Megabucks for megabytes; that's the promise many software houses give to aspiring programmers. But are these just exaggerated claims, or can you earn serious petrol money from your programming talents?



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ST AMIGA FORMAT

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102	Discrete Structures	101	3
103	Algorithms and Complexity	102	3
104	Operating Systems	103	3
105	Database Systems	104	3
106	Computer Networks	105	3
107	Computer Graphics	106	3
108	Computer Architecture	107	3
109	Computer Security	108	3
110	Computer Systems	109	3

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ABSTRACT *Salmonella* strains were isolated from 1000 samples of ground beef, chicken, and pork. The isolates were typed by pulsed-field gel electrophoresis (PFGE) and compared with the *S. enterica* serotype O:4:H4 strains isolated from 1000 samples of ground beef, chicken, and pork. The results showed that the *S. enterica* serotype O:4:H4 strains were the most common isolates from all three types of meat. The results also showed that the *S. enterica* serotype O:4:H4 strains were more common in ground beef than in chicken and pork. The results further showed that the *S. enterica* serotype O:4:H4 strains were more common in ground beef than in chicken and pork. The results further showed that the *S. enterica* serotype O:4:H4 strains were more common in ground beef than in chicken and pork.

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LICENCED TO DROWN

They're back - the dynamic Bomark duo, Bomark Whitley and Mark Strachan, demonstrating how not to emulate S&T. And all in the cause of Bomark's forthcoming Band game, *Licensed to Kill*, whose plot will closely follow the film of the same name. Let's hope it's a bit better than the last one, *Living Daylights*.

Hill Marketing (0800 444433) are now distributing Adge's *Real-Time Sound Processor*. The £99 package lets you sample, alter and output sounds in real-time. It's not like standard sampling software because the emphasis is on editing the incoming wave for immediate playback rather than playback at a later date. In fact, you can't store samples - they come in one and go out the other. *Real-Time* is the sort of hardware/software combination you might use to live off samples via a MIDI keyboard.

Real-Time consists of the

sampling hardware which plugs into the parallel port, protection Midge which slots into the joystick port and processing software. The processing software has a fixed sampling rate of 50KHz and has provision for amplitude

DESIGNER PAGES

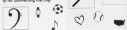
Two new packages to look out for from Good Disk are *Structural Clip Art* and *Professional Page Templates*.

Templates contains over 50 classic layouts for use in *Professional Page*. There are designs for adverts, newsletters, business cards, envelopes, flyers, brochures, reports and report grids. The accompanying booklet is very well put together and provides valuable suggestions on how to improve your desktop designs. *Templates* is so good that it is bound to cost a small fortune.

Structural Clip Art offers a collection of professionally drawn clip art for use in *Professional Draw* and *Professional Pages*. Because the graphics are structural, it is possible to resize the images without any loss of resolution. There's also a utility for converting the clip

art into bitmap graphics. The converted images can then be used in art programs that have the standard BMP file format. Like *Templates*, *Clip Art* has a professional feel to it. The number of images is vast and of high quality.

Hill Marketing (0800 444433) and the Adge Centre Scotland (021 6574262) will be handling the distribution in the UK, and will be setting prices for the products soon.



SOUND SENSE



and frequency modulation.

Although the manual looks good, it's full of errors: two spelling mistakes and 12 grammatical errors on the second page is going some!

The preliminary impression of *Real-Time* is of a

device that fails to reach its target audience of professional users. There's no way you would use *Real-Time* in a music studio as the hardware only samples to 8-bit resolution. It's competent, but really should do more for less.



BASICALLY DIFFERENT

Users of GFA BASIC on the ST will be pleased to hear that version 3.00B is shipping. The latest revision follows on from 3.0A (there was no version 3.00) and contains the following updates: • Patchable areas in GFA-BASIC (PAG) and GFA-BASIC (PAG) have been documented, in file reading and writing is greatly speeded up due to an increased cache in (Amiga) corrections to the manual.

Registered users of ST GFA BASIC can upgrade for the price of a blank disk and postage. GFA Users at 188 Roland Street, Corvax, Cheshire CW1 3LJ are handling the updates.

The compiler for ST GFA BASIC V3 is expected in late June. Price hasn't been finalised, but is expected to be less than £30. A 180-page manual is to be supplied with the compiler; this is an enormous leap from the 25-odd page offering bundled with the earlier version.

An upgrade for Amiga GFA BASIC is just round the corner, while the BASIC compiler will be launched late in the summer.

Both ST and Amiga versions of GFA BASIC V3 have been dropped to £10.95. GFA BASIC is available from GFA Data Media, Box 101, Walsingham NG11 5LP (0734 70441).



THE BEER'S ON BRANSON

Restocking the parts other games can't reach - Virgin's general manager, Bryan Oliver, boasts (several times) the re-emergence of the recently dormant Virgin Games label.

Releases scheduled for later in the year are *Samurai Wing*, *Double Dragon II*, *Shinobi*, *Continental Circus* and *Ninja Warriors*.

LE MICRO WHOOPS! DE MA TANTE

Avec ses petites sœurs, un programme pour perfectionner votre Français avec LCL. Micro French s'est pour des étudiants de GCSE et vous offre prononciation, vocabulaire, textes et tests de compréhension.

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QUICKIES

• Third Coast, manufacturers of various hard drives for the ST, are to launch a series of extremely expensive boards for the ST and Amiga. 286 and 486 boards for the STS and 1040 are promised. For the 486 there's talk of a 286-based drive for the 48000 will use 486 and 586 boards. Also coming soon for the ST are several gigabyte boards - a 16800 rated 60000 replace most for the standard 60000, a 16810 replace with optional 16811 module on processor and a 16812 board with optional 16811 or 16812 module boards too. You can get further information on all of these from Third Coast on 0257 42444.

• CTV Systems, a subsidiary of Right-based Elite Video, are supplying television display video systems comprising STs and Amiga. Elite's best kits include a computer, video timing software and a graphics device. CTV's Starter Pack for the Amiga for instance - which consists of an Amiga 4000, 4000 expansion RAM, 4000 graphics, TV modulator and TV Test software - costs £299.95. You can sample what's possible with CTV's kits by sending £5 to video high finesse, Elgin, Scotland, FK10 1BA (0454 5000) and seeing for the VHS Demonstration Video. The video includes examples of graphics and video software for both machines and shows clips from professional videos, adverts, logos and titles produced using CTV's software. The £5 is refundable on return of the video tape.

• The Amiga version of *Democrat* Democrat's *Democrat Master Editor* is now ready. It's selling for £19.95 plus 1% postage and packing from Software Express, 713-715 Broad Street, Birmingham, B15 1AT (011 2400000). The ST version has been set for some time, and is available for the same price. The Editor also has customer the many levels that constitute *Democrat Master* - in this way you can make it as easy or as difficult to complete the game.

• Something to watch out for in the public domain is relative to ST's graphics. ST's *Big Bang* (Amiga) import all types of Postscript documents. Imported text may be left and right justified - and can be displayed in columns. Pages format images can be imported appears into the page. Numerous graphic files are available including many different effects to be created. Screen updating is remarkably fast - even when clip art is being displayed. Printed output is most impressive and matrix printers is possible. Details from 2 Farnham House, Farnham, Surrey, GU10 1AA (0423 444444).

Antipalpatage Demo - the continuing saga. Still having problems? Try changing to medium resolution before running. Thanks to Marcus Mankin for that one.

X-GAD - it's not being distributed by Taurus as mentioned last month, but by GAD Vision on 01-600 2011. Also distributed by Vision is Amiga 9-GAD Professional, a £299.95 package requiring 2MB minimum.

Instrumental Changes - Chester's telephone number is in fact 0203 569529 and not 0203 27190.



MORE ON SOUNDS

Innovated Software have completed work on a back-up software package, *JS Spectroscope*, for their *JS* sound sampler. *Spectroscope* makes it possible to create, modify and analyse samples and use the results in your own software or other digitising packages.

Small sounds can be captured and stored. An FFT (Fast Fourier transform) analysis of the sound is possible. Unfortunately the first *F* in FFT should be changed to *G*, for speed slow because producing such a graph is painful. Included in the package is the ability to create new mathematically pure sounds by hacking existing waveforms or creating your own from scratch.

While there is a need for a tool such as *Spectroscope*, the manual assumes too much of the reader and is consequently unusable. It's hard to justify £29.95 as a package that doesn't look or feel like part. It might be an excellent package—but you wouldn't believe it from reading the manual.

Spectroscope is best used alongside Innovated's *JS-Sound Sampler* which offers digitising speeds from 1 to 40kHz, filtering, oversampling, wave, real-

time mixing and comprehensive stand alone routines for including sounds into your own programs. It costs £29.95. Both *JS Spectroscope* and *JS Sound Sampler* are distributed by Chips of Data Discs, 53 Houghton Rd, Worthing, West Sussex, BN11 9W5 (0903 780064).

WRITE RIGHT

Convivial of Tottenham Court Road, London, have introduced yet another word processor to the *JS* series. *Walt's Write* looks automatic indexing, automatic text formatting and multi-column page layouts.

Among the numerous features there is a text editor, international editable keyboard layout, integrated spell checker, dictionary (available in several languages), four cut and paste buffers, *Find Word* Plus file conversion utility, automatic document backup after pre-determined time, paragraph and page stylesheets, graphics support and numerous text styles.

Walt's Write will work with all machines and is available from Convivial (01-223 4781) for £125.

LOOK AT IT GO!

Bored waiting for your Amiga to process your precious data? Speed up your mine with a processor accelerator board from Third Coast Technologies (0807 426184). The *E149* accelerator cranks up the 68000's speed to 14.33MHz (as opposed to its usual more leisurely 7.16MHz) and a 35-40% increase in speed is claimed. You can also add a 68001 maths processor to further turbocharge your machine.



RUNNING OUT OF TIME

Little wonder the online Red Rat programming team have smiles on their faces; they've just completed the very time-burner game featuring Captain Cronicle. Zoom into the time gate and blast your way through meteorite-strewn inter-space as a desperate search across unknown worlds, meet malevolent monsters, sliver at the horrible inhabitants, tangle with the mutant creatures, scream through the lost jungles, outwit aliens... Yes, it's sheer madness. And it's available in a computer store near you for £19.95.

THE WORDS WORKS

With *JS Keyword* you need never be stuck for a word again—at least, that's what Swift Software, creators of the word-finder thesaurus, reckon. Keyword lets you search through a database of words by meaning, thus enabling to find exactly the best way to express yourself.

Keyword stands itself as a *CEM* disk accessory, so its accessible from either most other *CEM* compatible software. *Keyword's* dictionary can be located on floppy, hard-disk or RAM disk. Around 12,000 synonyms and antonyms are contained in the dictionary.

All you have to do is enter a word—or the first few letters of the word if you're unsure how to spell it—but *Keyword* searches through its dictionary for all words starting with the letters you entered. The results are displayed. After that you can click on the spelling of the word you wish to use. *Keyword* offers a second search to find all words with the same meaning as the

family
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board, martyrology
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sick list 651 sick per
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word you selected. You can continue selecting words and finding alternative meanings for them until you're satisfied with what you've got.

Keyword is much like *Kern's A-Rager*—it's just less polished and less pricey.

Swift are offering a rebate for watch worth a national 14.95 for a limited period to purchasers of their £29.95 word finder.

■ Swift Software, 547 London Rd, Hazel Grove, Stockport, Cheshire, SK7 5AA (061 4580028).



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GOLD DUST



Electronic mole extraordinaire STEVE GOLD tunes in to what's happening to the ST and Amiga on the other side of the Atlantic.

Despite all the hoopla last year when the ST laptop—Stacey—was first announced, there's still no sign of the machine hitting the shops. This could be, say sources, due to the decision to modify the LCD with the addition of a backlight.

The trouble with this idea, excellent though it is, is that it adds considerably to the 30 pounds that Stacey already weighs. Because of this, don't be too surprised if Alan begins shipping the machine as a "trans-portable" later this year. It's even possible that the battery-powered system may be scrapped.

The good news regarding Stacey is, however, that TOS 3.4 will be fitted on the machine, although sources in the US say there are still problems with some of the code in this, the latest ST operating system.

MANE MARCH

Bare Small of Gadgets isn't the only person who seems to have cracked Mac emulation on the ST. A small firm called CDRA Enterprises in the US (800) 415 4706(40) is readying an internal hardware board for the Mega ST series, with versions planned for the rest of the ST series including the Stacey (which emulates the Apple Mac in line style).

CDRA's board for the Mega ST series will be out sometime during the third quarter of this year, but in the meantime there's no harm in giving them a call.

Firm pricing on the Mac emulation boards has yet to be fixed as ST Rings Formot goes to press, but the great thing about CDRA's board is that no Mac ROM chips are required. According to James Worthing of CDRA, the new board will do everything that the Mac ROMs do without using Apple's proprietary code.

Finally this month, just room to squeeze in a rumour that plans to scrap 1040ST in favour of a 1080 Mega ST machine have been shelved. The reason? Alan is planning a new stable of STs for shipment later this year. Don't ask me what these new machines are—only the Germans and a few other people know!

NO MORE PERFECT WORDS

Many Amigans will have become aware by now that Wordperfect Corporation in the US has ceased product development on the Amiga, despite continuing with its word processor on the Atari ST. In a recent conference on Internet, the line network, Pete Peterson of Wordperfect defended its company's stance on this.

It appears that WPP's problems stem from the success of the AS/40, which Wordperfect doesn't run as well without much data swapping. Coupled with this, the package doesn't appear to sell well on the West German market. Wordperfect decided it was time to call a halt.

The story doesn't end there, however, as Wordperfect Corporation is still keeping on top of its five Amiga programmers to iron out any bugs in Wordperfect on the Amiga, and has committed itself to minor upgrades to cope with improvements to the Amiga's design.

Furthermore, Peterson does not rule out the possibility of Wordperfect 6.0 being ported from the Mac version to the Amiga. There were plans to do just v5.0 from the Mac to the Amiga, but the printer driver code was wholly incompatible. Wordperfect 6.0 will be based on a modular construction, so it shouldn't pose the coding problems that v5.0 did. Here's hoping, anyway!

MAKE IT MODULAR

MOS, the Dallas-based software house, has just released a major upgrade to its Module2 development system. The new package, which costs a merely \$385 (are you listening program-developers?) has a compiler capable of handling 45,000 lines of code in a minute, and is accessible from within the editor or Workbench, as well as from the command line itself.

The package also includes a single-pass Module2 compiler and program linker, program profiler, symbolic debugger, and several other high-end compiler features as standard. As if that wasn't enough, the program runs at just 512K of RAM, making it ideal for the AS/40 provided floccust 3.2 and Workbench 3.2 or later are fitted. Interested? Call (800) 218 3405/254 for further details.

One of the earliest users for the Amiga when it was first launched was that of video pro-

cessing. Time has marched on, and the price of the Amiga has fallen in real terms. At Tokyo, Kansas, firm called Nitebit has spotted this fact and released the Video Transfer, which it claims is the first broadcast quality video computer system for the Amiga 2860.

BRIEFING

The capabilities of the Video Transfer include digital video effects as seen on programs such as Top of the Pops. Nitebit claims that hundred of effects are possible, including pan/tilt, pull, flip, tumble, rotate, fish-eye, mirror, zoom, and many others. Furthermore, because all these effects are programmed within software, upgrades to the library are easily added.

The Video Transfer is an add-on card coupled with software for the Amiga 2860. Nitebit have said they developed their own operating system specifically for creating and controlling video effects, as well as 3D digital effects package.

Also available for the Video Transfer is a time-base correction unit, allowing the system to be used with any video source, such as video cameras and recorders, which do not have an external time-base correction system.

The bad news is that the Video Transfer costs a hefty \$1,595, plus another \$1,495 for the time base correction system. But when you consider that's for a PAL/NTSC full digital manipulation package for the A2860, it's superb value for money. Inquire today on 070 340600! Nitebit is on CDIO 94.3 3642 344.

SPECTRE UPDATE FROM THE STATES

US ST users will now be familiar with the Spectre 128 (the Mac emulator for the Atari machines), now that Nitebit and several other UK dealers are stocking the cartridge.

It's quite likely that UK dealers will begin shipping a much-improved version of the Spectre 128 operating system—version 1.0P—by the time you read this. The main reason for the upgrade is that v1.0 now includes Mac sound as a selectable option.

First impressions from US users of the Spectre 128 are that when Steve Small's sound option is enabled the recreation of Mac programs almost claims a lot. The good news for sceptical Spectre 128 users is that the sound option is optional, if only for slowing down the execution of the higher levels of Mac games.

The reason for the problem with v1.0P of the Spectre software is that, on the Apple Mac, dedicated hardware other than the 68000 microprocessor handles the sound effects. On the Spectre 128, the bulk of the sound processing is handled by the 64-bit microprocessor.



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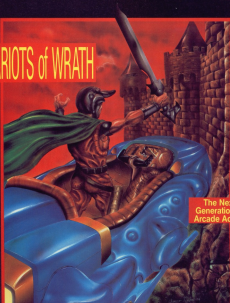
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The year is 2050. The day of paper has come to an end, the web never to be seen again. Fantasy or the prediction?

With the computer taking over everything from your local office, to the paper industry has started largely unnoticed, in fact instead of making paper computers, the computer is now responsible for more waste-paper than is used of the Sun. Remember all the useless junk that that drops through your letter box because of a key entry in a database.

Wait the day when you can finally put down your Parker Suprimer might not be as far away as you think. Computers are

increasingly interacting on the paper industry and the supplies are only just beginning.

LIBRARY ROUTINES

Libraries have already begun to absorb computers inside their craggy facades with many libraries removing their old-style library cards altogether. Microsoft's most achievements in this direction came years back but the British Library is now actively encouraging the small libraries to venture into computer systems. The computer does, after all, offer an instantly-updatable picture of every title in the library on offer under a range of subheadings.

This may well replace paper in a less

and fashion but the real achievements came when an entire record or reference book can be digitally stored in the memory of a micro-sized machine. Libraries as smaller libraries could then offer the same kind of service as the larger ones. An entire book could be viewed at a terminal offering instant access to a vast amount of information. As new kinds of printers and techniques like electronic ink to transform printing speeds, there may even come a day when the novel may be printed out to order and taken home.

ON-LINE KNOWLEDGE

This might all seem far off into the future but it's certainly not an impossible dream. Movements in this direction are already happening. Several years ago a commercial system sprang up on a US bulletin board offering information taken from reference books. The system was called Knowledge and gave access to thousands of pages of information taken from books found in libraries across the States. The idea was that registered users can go into the system and offer key words which are then searched for in the material and correlating articles are displayed. Alternatively a heading such as 'type hunting' could be supplied and suddenly everything under this title could be available with further sub options to specify particular areas of interest. All information on the screen



WASTE PAPER

Will there ever come a day when paper is obsolete and the computer screen takes over completely?
MARK HIGHAM investigates.



disks. Another disk stores the postcode and 'local' club details for every house in England.

PAPER CHASED

So what about getting rid of paper altogether? The most essential change is to reduce our dependence on paper. Instead of turning to a sheet in front of you, why not pick up your laptop computer instead? Laptops are capable of storing massive amounts of data. It's quite possible to wander down to the nearest branch of B. H. Smith armed with a blank disk and pick up the complete range of daily newspapers, which could be read straight from a monitor screen. But our natural inclination to fast to a printed sheet must be overcome first.

To really take over from paper, laptops will have to be light, extremely fast

and of course be captured into a buffer, suspended or displayed later.

This type of system is gradually finding an audience in Britain, although on a much smaller basis. Doctor's orders, and even histories, are already captured online to members of the medical profession so just how far away is the same format for everyday living?

It's impossible to tell at the moment because the amount of space available to hold such information is limited. Developments aimed at libraries and bookshelves are all very well but problems with memory versions, CD-ROMs and optical disks do, however, offer an answer.

The CD-ROM is capable of holding a massive 500Mb on a standard CDS disk which opens up some really big opportunities. It's already possible to hold the complete Oxford Dictionary, Roget's Thesaurus and the Bible all on one disk. The BBC's Domesday project (from over 400 years' stored information about every street in the country and encyclopaedia entries on Britain on just two



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COMIC CHARACTERS

The comic industry has been benefiting from the computer's first tentative steps into this field. Originally all comics were hand-drawn and then coloured, sent off to a repro house and turned



into books. The Japanese are currently facing a revolution in this field with a whole range of "modern" comic adventures appearing on the scene. These tackle such serious subjects as nuclear war and politics, along to appear in a wider age range of readers. With increased readership, more serious techniques are being applied to the development side and there are increasingly involving computers.

A new comic adventure, The Light Brigade, is published in the UK by Trident and makes limited

use of computers in its design. The story features a computer-aided setting and many of the backgrounds are designed in colour. An advanced light is used in the process with hand-drawn images being scanned into the machine using a Microbeam scanner which fits onto the pinhead of the Amstrad printer. The pictures are then blown up to ridiculous proportions and then shrunk back down again with the result that a black effect is achieved. These designs are then positioned down the side of the strip.

For more sophisticated have been made by a company called Grafimage based in Dublin. They use computers in the colour separation of their comics, their of drawn and film, digi-scans and Scan Draw, and have all been able to show a great number of improvements in a wider variety of colour. Using the computer in this area ensures that precisely the right colour can be used and although effects, colour gradations and repeat design opportunities are easily done.

Nigel Kitching, the artist on the Light Brigade, comments that

computers could one day be used as a massive database to hold lines and a library stack of character moves and then these could be downloaded into a strip with a plotter or plotter providing a hard-copy output of the comic strip. "The simulations would become very edited - it's a step I would never like to see implemented," says Nigel.



We are giving away 12 Trident P. strips in the first 12 readers to write in and ask for them - the fastest completion in word write to Trident Computers, 89 Armitage Farm, 4 Green Street, Bath, BA1 1SL.



"IN THE HEAVENS ARE NOT ENOUGH (LARGE) TO GIVE US OUR OWN OWNERSHIP IS UNUSUALLY PLANNED"

"IN THE HEAVENS ARE NOT ENOUGH (LARGE) TO GIVE US OUR OWN OWNERSHIP IS UNUSUALLY PLANNED"

"UNUSUALLY PLANNED, CARROLL WOULD HAVE GIVEN THE HEAVENS AND GARDEN INTO THE HEAVENS, AT THE END OF THE HAVENED HERE"

"UNUSUALLY PLANNED, CARROLL WOULD HAVE GIVEN THE HEAVENS AND GARDEN INTO THE HEAVENS, AT THE END OF THE HAVENED HERE"



and have very high quality displays. Five companies have explored the possibilities of a paperless computer despite the extremely sophisticated technology in capturing and hard-copy screens.

It would also need to be able to read handwriting in order to compare rate with a hard computer and could hold contacts, notes or other hard-copy material. The Prod Office has an early prototype intended as a backup to read handwriting. Computers are already employed to read the post code on letters. In help writing, a machine capable of reading handwriting will be with us soon.

People will need to feed the computer to be prepared to open up the security of paper. However, until then the computer looks likely to continue slowly slipping into paper's territory. It is already possible to purchase simple



■ The Prodat Synthesizer above is the first step away from books. Over 10,000 words are translated into Prodat Synthesizer's circuitry - even the entire works of Barbara Cartland could be placed in an object no larger than a watch.

computers which hold the entire dictionary featuring a small keyboard and LED display.

Once everyone owns their own personal computer and can stop playing tennis for 100 minutes, then progress can really begin. Already some mail-order companies allow orders to be made on computer without any need at all for any written work to surface, and the Black Exchange is almost entirely electronic - except for the booklets the buyers take home each month.

Increased portability and reliability are just the start. Imagine a world where paper is almost an extinct as the one attached beside it. It will make for an increasingly efficient and tidy world and that can't be a bad thing.

01/04/2019

Cash Position to Date

Bank [1]	1,245.89	Dr
Bank [2]	79.00	Cr
Cash	120.00	Dr
Surplus	<u>1,287.89</u>	

Transactions = 36 Max: 250
Analysis Points = 65 Max: 500

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Category 1	Value 1
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"Actually using the program is very simple, everything is under the control of simple menus, generally operating through a split screen, which has options and prompts on one half and a working area on the other. Even people who know nothing about accounts on PCs should have few problems... If you're running a small business, **Small Biz** should be the first line for you."

1997

"I can make no criticism of Small Business Accounts. I require everything the small business could want."

STIFFNESS

Abstract

- Simple to operate
- Requires multiple P & L, Balance Sheet, Trial Balance and full credit flow
- Consistent on system update of cash and bank balance and profitability
- Purchase and sales day books
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Figure 1 consists of two bar charts, (a) and (b), showing the percentage of respondents for different levels of agreement with the statement "The government should do more to protect the environment".

Chart (a) shows the percentage of respondents for different levels of agreement (Strongly agree, Agree, Disagree, Strongly disagree) across four groups: Total, Male, Female, and Age 18-24. The y-axis represents the percentage from 0 to 100. The x-axis represents the level of agreement. The legend indicates that the bars represent the percentage of respondents for each level of agreement.

Level of Agreement	Total	Male	Female	Age 18-24
Strongly agree	~65%	~60%	~70%	~75%
Agree	~30%	~35%	~25%	~20%
Disagree	~5%	~5%	~5%	~5%
Strongly disagree	~0%	~0%	~0%	~0%

Chart (b) shows the percentage of respondents for different levels of agreement (Strongly agree, Agree, Disagree, Strongly disagree) across four groups: Total, Male, Female, and Age 25-34. The y-axis represents the percentage from 0 to 100. The x-axis represents the level of agreement. The legend indicates that the bars represent the percentage of respondents for each level of agreement.

Level of Agreement	Total	Male	Female	Age 25-34
Strongly agree	~60%	~55%	~65%	~70%
Agree	~35%	~40%	~30%	~25%
Disagree	~5%	~5%	~5%	~5%
Strongly disagree	~0%	~0%	~0%	~0%

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Figure 6

QUINCY

Without doubt, Deluxe File is the most popular art package ever released and is constantly used by programmers. The extensive Deluxe range of software including Deluxe Paint and Deluxe Demo has taken the design scene by storm and Deluxe Paint is largely regarded as the definitive art package for the Amiga.

On the less serious side, *Getriched*, the *Deluxe Collection*, the testing paths of *Powerhouse* and the wacky antics of *Junior Soft* were all created by Electronic Arts. To top it all, their current number one hit is *Populous*, destined to be one the highest selling games of the year.

You can win all of this and loads more in this competition.

Electronic Arts are generously giving away their entire range of software for adventure machines (see lucky reader possessions). So why not answer the three questions below and send your answers on a postcard to EA SOFTWARE, 20 MAY FIELDS, 57 ADELPHI ROAD, NUSANT, PUNJAB, a QUINN STREET, SARIN, INDIA. PLEASE REMEMBER that you remember to include the name of your computer software you wish to win a gift. The winning entry will be selected from a list on July 13 to make sure you have submitted your entry by then.

QUESTIONS

Q1 Populous featured various influential characters, who were they?

- a) Mrs Thatcher and Nigel Lawson
- b) Joan Collins and her wardrobe
- c) God and the Devil

Q2 Rollercoaster was a game involving which type of craft?

- a) Aircraft
- b) Hovercraft
- c) Spaceships

Q3 What is the name of Electronic Arts' most recent art package on the ST and Amiga range?

- a) Soft Home Art Studio
- b) Deluxe Paint II
- c) Picasso Paint

RULES

1. Competition entries must be received by July 13 if you want to participate. Anything received after this date will be discarded in our discretion.

2. Employees of Future Publishing and Electronic Arts may not enter unless they want to be packaged and shipped to Iran.

3. The editor's decision is absolutely final and no correspondence will be entered into - do do complaining if you don't win.

Electronic Arts have brought out everything from paint packages to Populus and now they're offering you the opportunity to win the whole caboodle.



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Run Magazine, ST 1001

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¹Thomas - the real joy comes only from using it. I can say without any fear of contradiction it is the best word processor available at the price. In one class, all were using it back in 1988.

Protest is the result of 4 years of development. Unlike the majority of competitive programs Protest is 100% British and is being developed further all the time in response to the needs of British users. Registered users are always informed when upgrades are available.

A brief summary of some of Protect's features:

[illegible]

Star55: Unlike its competitors, Procast does not use Gens. The scrolling speed is four times faster than that of Gens-based word processors. Yet Procast is still WYSIWYG and still allows access to desktop accessories.

"Where people always say they will, we do it." **BY J. MICHAEL HARRIS**

Amiga: PROTECT uses the Amiga "WIMP" interface fully and supports pull down menus, use of the mouse for cursor movement, block copying and window raising. Protect is fully compatible with the Amiga's multi-tasking operating system and makes full use of Amiga's Preferences system.

[illegible]

Figure 6. The effect of the number of iterations on the accuracy of the proposed algorithm. The figure shows two bar charts side-by-side. The left chart is for the 'Number of iterations' ranging from 0 to 100, and the right chart is for the 'Number of iterations' ranging from 0 to 100. Both charts show the 'Accuracy (%)' on the y-axis, ranging from 0 to 100. The bars represent the accuracy of the proposed algorithm at different iteration counts. In both cases, the accuracy increases rapidly in the first few iterations and then levels off, reaching approximately 95% after 100 iterations.

Program made by Microsoft and Quint Dictionary Font files	expressions formatting auto-indent, set tab stops and text proportional spacing, right justified text dictionary built in memory is only text any number of user lines to define document layout, left/right margins and normal/decimal tab stops chase from, close or parent text, all you type or otherwise, suggests alternative spellings, works with foreign languages
Scrolling checker	full character set available on screen. Character symbols may be reddefined
Symbols	time shown on screen. Use date within document help you to start using Photodisc
Time and date	two-documents in memory, copy text between them direct (without) for envelopes etc.
Text file editing	envelopes and envelopes etc.
Quint dictionary Utilities	quint count of any text, whole text or just a label anagram and anagram making features
Word count	on-screen bold, underline, italic
Mail queues	Mail merge
Mailmerge	The most comprehensive mail merge program available. Use it for labels personal and professional letters, membership cards and much more - mail data from files from any database or spreadsheet - ask for variables from keyboard - display message while printing - include file for printing - reformat initial printing - conditional printing and repeat until loop constructs - numeric calculations and string expressions including substrings - commands to write information to a separate file - menu driven, full on screen help



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"America's Problem 4" is just about unworkable — the results of an excellent program!" — JIM HARTMAN

References

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Abstract

AFNOS

Amor 187 (87) 877 Lincoln Road, Portsmouth, NE 68104. Fieldwork season: May to



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Figure 1. The effect of the concentration of the *Agaricus bisporus* spores on the growth of *Agaricus bisporus* on the substrate.

PROTECT AND SURVIVE



Are software pirates above the law? What can be done to stop them? STEPHEN COGAN discovers what hackers and pirates get up to behind closed doors.

Hacking: there are two reasons for doing it, for fun and for profit. Those who do it for pleasure are called 'hackers' while 'pirates' earn a living from their criminal activities.

Crackers do what they do for enjoyment - by them it boils playing the games, it's one more against another, software protector versus cracker. For pirates it's no game - their income depends on their breaking into games and selling the

hacked versions to the general public.

At the moment game crackers give high prices to their main motive. This is a vicious circle; the less software sold the less revenue companies receive so the higher prices need to be.

Some crackers hack games and then distribute them to their mates. Because of this, most software houses don't make a distinction between crackers and pirates,

but pirates definitely lose the software industry money. The case against crackers isn't proven.

Rampant piracy can kill the software industry. Take the Dragon for example; in the early days, games sold in huge numbers - high, if not higher, than a good night's game today. Widespread piracy decimated sales and many programmers in the Dragon market left to go 16-bit because pirates were reaping the rewards of their hard work.

Bob Hay of the anti-hacking organisation IASTI (Institute Against Software Theft) sees crackers as irresponsible since they are meddling with people's livelihoods: 'If a programmer loses sales through piracy they may well think twice before starting on another game. The status of programmers from the leisure industry could get much worse unless people's attitudes towards copying games change.'

SINKING THE JOLLY ROGER

Fighting piracy is an uphill struggle due to counterfeit laws — this should change with the introduction of the Copyright, Design and Patents Bill which is presently going through Parliament.

As the renamed committee calling illegally copied software or selling without a license is liable for a fine of up to £2,000 or a prison sentence of two months, in some cases both are the options. This will be sufficient for any results, and £2,000 and a two-month term up to 18 years will be possible.

It will be illegal under the new law for anyone to either possess or use a device which can copy a program. The music industry welcomed HED's help in lobbying Parliament to get this provision enacted with the advent of digital audio recording technology that are widespread of people being able to make perfect copies of albums.

But will the Copyright, Design and Patents Bill deter pirates? Probably not. The case against the Glasgow pirates sent to Southside CBS last August has been dropped by the Office of the Scottish Procurator. And why bother why? Because the case was deemed too complicated.

It's a complex issue. That sort of thing means that pirates will continue to thrive and there's no law of the law.

There have been successful actions brought against pirates such as the three in 1988 when Microsoft obtained a court order that enabled them to seize printers and other tapes and duplicating equipment. The copying operation was run through adverts in major press and had a catalogue of over 50 games and utilities. But these sort of books are too few and far between, and the printers that he used to be more efficient to catch the pirates.

Cracked games are freely distributed through a network of informal contacts, often via mail or computer clubs. One month's stolen club must hold the record for the most unsuccessful copies made in one place, over 30 Atari STs were taken together for copying. Having said that, not all clubs are hotbeds of copying and cracking, but it's hard for club organizers to make sure that people are not breaking the law.

Some hackers could become gifted programmers. The skills of the elite game crackers are extraordinary, and often they are isolated by their less talented brethren. If directed properly they could produce wonders for software companies. There is a story doing the rounds of a lad who hacked into Ocean's Operation Wolf, which is 3D format coming on three disks, removed a bug or level for which causes the game to crash when a particular signal is shot and compressed all the code to fit on one disk. Disks aren't cheap — Ocean would have been extremely happy to have left two disks out.

Some hackers are beginning to put their programming talents to better use. A couple of development houses recently announced that they are training ex-crackers in the art of games programming, and the West German cracking group TEX say they are working on a game.

CONFERENCE TICKETS

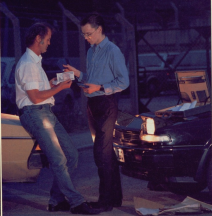
Occasionally crackers get together to discuss new methods and new ideas. Some travel thousands of miles to join cracking parties. These hackers must be making a mint from what they do or have jobs that reward them with substantial incomes.

The Chaos computer club regularly holds events like these and was fined by a BBC crew who were compiling a programme on the computer abuse. The teenage misused crackers hunched over computer screens consulting advice during their 'virus workshop'. Hackers from Chaos have broken the protection on games, written viruses and even broken into supposedly secure American defence computers and passed on information to the KGB.

SPREADING IT ABOUT

Cybernet hackers don't like the fruits of their labour to be spread around the country — but when a cracklet gets a game to a friend and asks it not to be given to anyone else, the friend may give it to another friend with the same plea. In this way it is very easy for a game to disperse very quickly.

The indications of programmers can allow pre-production copies of games to fall into the hands of hackers before the finished version gets into the shops. Software house Lind suffered unauthorised versions of their adventure by and for being distributed through



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■ The criminal wants a dangerous prize for a stolen hacker.



■ But the proceeds can make it worth while.

If the lure of large amounts of cash on offer can introduce young hackers to the shady side of the criminal underworld, is the same use as waste of (paraphrasing) Edward the hacker even had to make a rendezvous with a messenger from the software "big boy" in a deserted factory lot like something out of a crime TV series. Payments for cracked games are made strictly in cash.

It's not that the networks many months before it was finished. This kind of exposure of a half-finished version of a game can be disastrous.

Another game being hacked around the internet, months ago was *Operation Neptune*. Many programmers believe that the damage is not done by the crackers themselves, but by the extensive networks that spread the cracked

games throughout the UK and the rest of Europe.

SWITCHING OFF

Cracking has been going on for years. At first, when the protection was removed the person responsible would leave a message in a prominent position in the game. Gradually hackers started to use pseudonyms and then to acknowledge each other with wording

messages in the title screen. After this came the hackers who would take sections of commercial games to produce music or graphic demonstrations. The most notable of these being the TCG group who are responsible for demos such as *The BIG Demo* and *The Amiga Demo*. On the Amiga the Northstar group are responsible for a collection of demos on one disk which is well worth seeing.

THE UNTOUCHABLES

It's not just that many young computer users look to see as pirates and crackers, they see them as heroes - above the law, better than the best programmers and they make games easy for everyone to get hold of. David Gribble is a typical 19-year-old cracking team on BT and an Amiga who knows the cracking community.

How many games do you buy a month?

David: I buy sometimes four or five - but very rarely. He's right. Usually I get games from my mate Mike. Mike's brother - he knows a hacker. That's how he gets all the latest games which he passes on to us. Some of the games aren't even available in the shops. Mike knows the guy knows people in software houses.

Why do you watch hackers when you can't perfectly well what they do is wrong?

That they are great, aren't they? I mean, look what they can do to games. Put messages in the title screen, add little bits and remove protection so everyone can have copies of games. They aren't doing anything wrong... everyone takes from the radio and TV and that's supposed to be wrong. If everyone does it then it can't be wrong. Even me! I've taken stuff from Radio 1 and the game is around every Sunday. It's the one that starts the workshop.

But don't you realize software houses and programmers are losing money because of hackers' activities?

Half off! Software houses have got

loads of money, everyone knows that. Anyway, most of the games that I get are such rubbish I wouldn't buy them even if I had as much money as the software companies. They're really boring.

So why do you continue to accept cracked games if you think they are rubbish?

Have you seen the scrolling messages and digitized music most hackers put in title screens? They are brilliant. Better than the games even. And what they say is that is excellent too.

Some of the stuff that they put in there is dead funny. They use words which would make that go wrong in to use them. Mind you, he probably wouldn't know what they meant even if he did.





It's up until a few months ago a game that had been cracked would either have just been stuck on a straight bootstrapped disk or on a disk with some kind of menu. This was very useful in terms of disks, as cracking groups have started comparing the games so that they take up less room on disk. One particular group — see top left — manages to get five or six CD games on one double-sided disk. This same group took, at the latest count, brought out in excess of 100 of these disks.

Hackers are becoming more and more confident; they openly brag off other cracking crews and put their names and addresses into cracking messages (middle left).

Other hackers put wonderful animation sequences and sampled sounds at the beginning of games (bottom left) that often look better than the games themselves.

Software is distributed around the place already long before it reaches the shops. In this case (above) and elsewhere (bottom from left) stolen copies are two such examples.



In order to crack programs most hackers must have a reasonable knowledge of assembly language, though with the aid of a certain utility even leaders of *new Computer Express* could crack most games. The utility is a CD (Destroy It Yourself) tool for people who want to remove the protection from games or applications. There are cer-

tain types of protection that this utility can't handle, but since it is normal for a company to use someone who specializes in protection to test their games, breaks do develop.

One such software protection artist is Rob Northern who handles the cover disk for ST Araya Format — the CD utility mentions his protection as one type

that can be cracked.

WHAT CAN BE DONE?

The software industry is in no doubt about the harm piracy does, but what can be done to counter it? Better software protection will help to deter casual hackers, but will only encourage the elite who live day and night with their disassemblers. Public awareness of the damage piracy does could help, but there is as little sympathy for software houses as there is for record companies bleating about home taping. People simply do not regard copying games as being immoral, and see it as being only technically illegal. The provisions of the new Copyright Bill are ridiculously impractical — will the ban on copying equipment include a ban on doing for instance? The managing director of a leading software company probably had it right when he said recently that the only cure for hacking is a better-than-whiffle.

Commercial forgery is a different matter, and must be tackled head on with stiff prison sentences. Forgers getting an edge loose by proving themselves the master of a thousand disks of brown plastic should not be confused with shady dealers in stolen software. ■



MAFIASOFT: THE ITALIAN CONNECTION

Pirating has become an international industry with tentacles reaching all over Europe and the Americas.

One of the hotspots is Italy. Piracy is particularly prolific there because so few British and American companies bother to sell their software outside their traditional markets.

An idea of the widespread and semi-legitimate nature of Italian piracy was given by businessman Maurizio Gensini at a recent trade show in London. Gensini displayed nationalized copies of software from other countries. When questioned, the owners of such magazines related that individual people had sent in the pro-

grams claiming that they had written them.

Italian pirates duplicate the packaging and covers and pass the programs on to distributors. Surprisingly, the software houses are often unwilling to take action — Gensini quoted the example of British Hughes International Software.

It seems that despite being shown the fuzgari and told where it had come from, the copyright holder Audigen's only reaction was to say that the Mediterranean dealers wouldn't sell the copy because the packaging wasn't as good as the genuine article. The pirates clearly don't have the same opinion.

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HANDY MAN

Using your character's hands and face is the key to realistic animation. MARK PICKAVANCE goes through the emotions.

For serious character animation the elements you animate must portray emotion – the best way to do that is through gesture. You need to manufacture fear, rage, surprise, worry and so on. The overall design of the character has a bearing on what sort of emotions are possible and likely. The walk cycle can show mood, age and agility – but for the more subtle emotions we must look to the hands and head. Without expression the character is a robot, devoid of emotion and true life. If you can get emotion into your animation then you are getting to the essential objective of character animation: the feeling of life.

TURNING UP

There are a few ways about it: hands are a problem, they are either too small, too large, in the wrong place or just consider the wrong shape. The trick is to size them as generally as possible and then add detail when the rest of the animation is working well. Early concentration on the hands can distract you from the purpose of your endeavor.

So that you can have some designs to copy, there is a screen composed entirely of hands. They have been drawn in the style of Mickey Mouse, white gloves with three bands on the back of the hand. The technique of drawing them is the same as for the entire mouse. The palm is drawn as a circle or an ellipse. The three fingers project from this, on one side and the thumb at right angles to the fingers. Try copying these hands to see you get the hang of it. Hands are as simple as art and not easily mastered.

The use of gestured and animated hands can enhance a scene by making the character more 'readable'. The eye is often drawn to the hands as a source of expression and reinforcement. Even if they don't move they can portray the feelings of the character by their position. Hands on hips shows confidence and bravado, while folded arms shows hesitancy. Placing the hands on the head can mean sorrow, madness or shock. If you are not sure where the arms and hands should go, set out the scene

yourself and see where you place your arms and hands.

HEAD TURNER

Remember everything that moves in life, travels in arcs. If you don't want to animate a robot, which by its very mechanical nature travels in straight lines, you must make all the movement describe I arcs. The example about to appear will demonstrate this; it will also explain why computer 'in-betweening' does not do what real inbetweening does.

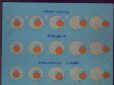
Consider the five drawings in the diagram on the rightmarked 'Strong'. Drawings 1 and 5 are the 'key' positions in turning the head. All nine frames that make up this movement haven't been included, but you can easily create the missing frames. The obvious source of action in inbetweening is at the top; the head simply rotates as if on a spindle.

This would be fine if people's heads were connected to their bodies by a similar mechanism. However, the neck is a very complicated structure, enabling all sorts of fine movement in many different planes. Turn your own head and see what happens; you should be aware of a slight dip in the middle of the rotation. This is the word motion which we must recreate in our animation.

In the 'Right' drawings the correct sequence is displayed – for you to create the full animation you will have to in-between frames 2, 4, 6, 8, and 9. This will produce a good animation over nine frames, which is a reasonable timing for a head turn.

The scale of the 'dip' is very much dependent on how cartoon-like you wish your animation to be. The more you exaggerate, the less lifelike and more expressive it will become. Copy the example and include the missing frames.

One additional feature in the correct version is that the eyes move to look in the direction the head is turning, but ahead into just intended of the rotation. The general reason for turning the head is to enable us to look in that direction so the eyes should not just look directly forwards as in the 'Strong' example.



WHITE GLOVES?



The 'hands' graphic shows what are clearly Mickey Mouse's hands. This is obvious because of the white gloves. But why should a mouse be wearing white gloves? Unfortunately, that's tricky to answer. Mickey seems to have any sensible answers to this question. In early Disney cartoons they were not present, but sometime in 1929 they mysteriously appeared. From a pure design point of view they are very helpful as they make a clear distinction between the

hands and the arms. This may have been the reason that they remained a feature after the initial reason for their inclusion was long forgotten.

Ironically most animation studios carry a large stock of white gloves. They are used by the artist and have always been to prop fingertips and other areas damaging the cells while they are being painted. If you look at the back of some old gloves you will undoubtedly find that one person has marked the back of the pair with three black lines.





EYE STRAIN

Having moved the head, it is only correct that you should now include the eyes. Turn your head from side to side and look again at what happens when you do so. You may notice that the tendency is for the eyes to either blink fully or half close. The eyes should close on frame 5. This is yet another subtlety which enhances the overall effect. This is shown in the third version of the head turn, entitled better still.

Eye movement is very similar to head motion - it must be performed in arcs. If the pupil travels across the eye it should not do so in a straight line. In the

graphic of eyes you can see what should be done to produce the effect of the eyes following an object from left to right. The 'normal' version shows this.

Note the pupil does not touch the side of the eyeball. If it does it becomes more effective if the eyeball tilts slightly, as if the pupil had some weight. This is the 'extended' example below. There is no logic to this, it just looks good.

At the bottom of this graphic you'll see four eyes marked 'A' to 'D'. Each demonstrates a different look. Eyeball 'A' shows a large pupil which indicates attention, receptivity or wonder. This is the opposite to 'B' which portrays a scared, startled look. This sort of eye would be associated with weak, perhaps hypothetical characters. If the pupil touches the eyeball as in 'C', this shows a torpid attitude, or determination. If it floats around never touching the edge this gives a somewhat vague appearance, so in 'D'.

BLINKING GOOD FUN

You might think that blinking is quite straightforward. It is in fact one of the more difficult things to master. If you are drawing a blinking eye, use the arc



drawing function of the art package you are using, if it hasn't got an arc facility you will have to do this by hand using 'zoom'.

The eyelid should never be drawn as a straight line, always as an arc. There are three main types of blink, fast, slow and squint. A fast blink is used to show that the character is awake and alert. The faster the blink the more awake the character is. Slow blinks are associated with sleepy characters.

The drawn example only shows frames 1, 3, 5, 7 and 9 again. You can draw the interframes, and try removing frames as well. The all blink at least once every 10 seconds, for cartoon characters to appear normal they should also make regular, fast blinks.

CHARACTER SHEETS

In any big production several people will animate each character. This means that all the animators must reach a common style, and be able to control their own creative forces to ensure that style. To help them do this a 'model sheet' (or sheets are preferred by the designing animator) shows a single character from numerous angles, involved in a wide variety of activities. The other animators will use it as a reference so that they can maintain the pose, shape and details of the character as if he was being animated by the only master. If you are serious about animating then you should make some model sheets on your computer. You have the distinct advantage over a conventional animator - he can't cut and paste portions of his model sheet into his current drawing.

PHOBIA



Computer Magazine



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and if you want something more taxing, try taking the 'head turn' animation and add a squint or blink at the end of a 'look left'.

NEXT MONTH

The going gets tough. The subject of and month's tutorial is making your

characters talk. Yes, mouth movement. Something most of us are very good at.

'Lip sync' is one of the most difficult animation tasks to attempt. Look out for it in the next issue. It's going to be hard to keep awake. If you can manage to do this you can do anything - well almost.

ROTOSCOPE

If you find animating a character too difficult, you could try a different approach.

The 'Rotoscope' technique is also known as 'onion skin' or 'conventional animation'. The Rotoscope machine is usually a converted camera through which film can be projected onto paper. The previous frame's drawing (people performing the action you want to imitate) is then projected through the machine, or just as a guide. The snag is that all the images you create are too accurate, and most too realistically. Any animator can immediately spot 'Rotoscoped' work because of its very nature and style.

When Disney animators had problems animating Snow White they turned to Rotoscope as a solution to the film's heavy eyelids. Snow White was in production for five years. In that time over five million sketches were made, using around 600 sheets of paper. In the end they only used some Rotoscoping to start animating the Snow White character - after a little practice they discovered that they could animate her without Rotoscope. They never used this technique again. The feature film *The Lion of the Kings* used the process extensively, in fact for all the characters. The end result was attractive, but lacked the pure style of 'real animation'. A successful case of its use is in the original *It's a Wonderful Life*, for their single 'take on me'. This used live action combined with Rotoscope. The video was a crucial factor in the ultimate success of the single and group.

MIRROR MIRROR

As with all character animation, the best technique for finding out exactly what happens when a character does something is to

do it yourself and observe. If you enter a commercial animation studio you will discover that most animators have no, or near, their desks a mirror. Some studios have an entire wall of mirrors, like a ballet studio. You will also discover that animators spend many hours a day making the most minute expressions and poses, while observing themselves in the mirror.

This has had many people to question their sanity.

PHOBIA



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PD UPDATE

Whether you're a hardened programmer or a joystick junkie, the PD libraries have something for you, finds JASON HOLBORN.



ST

All the programs featured in this month's ST PD Update were taken from the Flagship range of PD disks although most can also be found in other collections.

UNITERM DISK COMLOS

Computer communications is one of those aspects of computing that you either love or just can't get enough of. The Format team is exactly the same – half of the team are real communications buffs while the others scream at the tops of their voices every time words like "baud" and "parity" are heard. Comlos is unfortunately misunderstood by a result of seemingly meaningless jargon which can make the task of choosing the right modem and software a very confusing business.

Supposing you've already chosen your modem (if you haven't, check out our monthly modem feature in issue 7) of Format, what software package are you going to use? It will come as no surprise to you to learn that Uniterm is a communications package which could be just what you've been looking for.

The program offers extensive emulation of several of the most popular terminal types such as VT102, VT300, etc as well as allowing emulation of the user mode of the electronic graphics format. As well as standard terminal emulation, Uniterm also includes modem-to-serial transfer facilities. Potentially supported include XModem, YModem and Zmodem.

It guides you starting out in computer communications and you cannot afford any of the commercial offerings. Ben Uniterm is well worth investigating.

SUPER NES SHOW DISK DEM.DIC

Producing endless graphical wonders in our favourite game package is all very well, but what happens when you want to sketch your masterworks on the art world's most famous electronic program. Using SuperSketch is a tediousness wouldn't be doing it justice – it is a casual



■ The configuration menu, while Uniterm is easily accessed by just pressing the HELP key.

enough more interesting than your average run-of-the-mill sketches. For instance, the program will automatically load and display any low-resolution landscape-format pictures that are in the same directory as the program itself. So what? I hear you say. Displaying pictures is only half the story with Super Sketch as it also allows you to add a commentary to your art work in the form of a multi-color scrolling message that scrolls smoothly along the bottom of the screen. For that extra impact, Super Sketch will even temporarily perform a whole range of wonderfully colourful effects in the border.

MEMOS DISK UTIL.00

One of the most useful features offered by the ST's GEM desktop is its desktop accessories. Desktop accessories come in many shapes and sizes – ranging from the simplest desktop clocks to complete panel packages. Luckily, desktop accessories tend to be abundant within the PD libraries. There is a real life to game being under the guise of a desktop accessory. The object of the game is to guide Thomas (player of mouse) around a huge 3D maze and to help him escape to freedom.

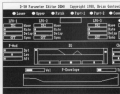
SPREAD DISK UTIL.00

Do you need a spreadsheet but can't afford the high price? Well, look no fur-

ther than the PD libraries and you can pick up some very acceptable spreadsheets for the price of a disk. One of the easiest to use is the imaginatively named Spread. Spread is a very simple spreadsheet that works and feels similar to the spreadsheets such as Lotus 1-2-3



■ Spread in action.



■ Designing sounds on your GEM has never been so cheap. (Note overheads.)

AMIGA SUPPLIES

The following companies distribute Amiga PD software in this country. To find their full addresses, give them a ring or visit the advertisement pages.

- George Thomson - 07580 244
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- Amiga PD Unlimited
- Soft-rite - 0780 28009
- Purple PD - 0273 70793



and MP Professionals. Obviously the program lacks the sophistication but it will still easily handle most simple spreadsheet applications.



AMIGA

The programs featured in this month's Amiga PD Update were taken from either the Fast or Fast60 range of PD disks.

DISK EDITOR FAS60 75

PD-MDI software for the Amiga has never existed in any great abundance but if you look hard (and use very powerful utilities to assist) you can find it. The Disk Editor is a patch editor for the Roland 850 linear synthesizer that seems to be used by

nearly every group these days. The program is unfortunately only a demo but apart from the absence of a save function, it is fully operational. Although the package does not include any method of saving your creations, it will still allow you to create sounds quickly and easily. Although you cannot save your patch to an Amiga disk, you can of course still store it in the 850's onboard memory.

The full program will allow you to build up a library of all your favourite 850 patches and have them stored on Amiga disks, but this demo will provide you with an ideal taster of this power package before you decide to look at the necessary readers for the complete program.

MOONSTER FAS60 154

If you take a look through any PD catalogue, you'll soon come to the conclu-

sion that PD programmers seem to go through regular fads. During these fads programmers seem to pick up on a idea and then try to use it for as many different applications as they can think of. The current fad with PD programmers seems to be based around the topic of 'footy' anything that has to do with their code on. We've seen footballers, where a kick is frozen at reduced to a little size at the bottom, the screen, and also window control which work on the same principle as are very useful for keeping it. Wonderful clutter-free. Moonster is also you is instantly aware the most popular to any shape, size or colour and double clicking on an iconified representation of the mouse pointer or mouse. As anyone who has played around with the mouse control editor Preferences will tell you, this can't quite fun.

DEMOS CORNER

After last month's premiere of Demos in Corner, Demos Corner steps up into full gear with demos for both the ST and the Amiga.

It seems hard to believe the last year among the multitude of demos I receive - but, after several long and some of winning and others, I eventually came to a decision. Both demos featured in this month's Demos Corner were supplied by 17 Bit Software who can be contacted on 0621 309963.



Being strong is the Great song with Fur Demo 2

ST

Most of the demos I received consisted mainly of other resupplied Rob Hubbard tunes (remember him?), some good music or digital pictures. One particular disk that did go down well with the Forum art team was a rather shiny rendition of Gary Anderson's classic, 'Triton' (Triton's Secret), and the mysterious theme music. However, after everyone had settled down and stopped giggling on about the equivalent where Captain Jack had given his wonderful powers, I finally decided on a winner. This month's magic demo was programmed by 'The Union' and is not a single demo, but a whole collection of various demos that really do show off the parts of your ST that other demos cannot reach.

Each of the included demos is equally impressive and show off particular aspects of the ST including some that many still maintain are not possible such as, for example, multi-frame 3D in 11.9g and 3D in 11.9g while playing a complex sound sample, as well as full

screen and update in the border etc. The Union Demo is available on disk number 175.

AMIGA

Amiga demos continued to flood in at a rate of knots this month, and among the usual collection of image-processor, editor, and some very impressive ones turned up.

Unfortunately, picking a single demo proved to be too much even for me so I opted to pick up a best demo of the month, but a last demo also at the month. Most demos are usually packed into a disk containing several other demos and I therefore picked the disk that offered the most innovative and impressive collection. The disk I finally picked featured six different demos, all from different authors. Probably the most visually impressive demo was the 'Kathema Psychod' demo which employs complex effects, large multi-colour bitmap objects and very smooth scrolling. The second of the wonderful demos was the 'Fur Demo 2' which demos some of the best money yet heard on an Amiga - not that you'll be hearing the 'Fur Demo 2' song for weeks to come! This particular demo disk is available on disk number 175.



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NEW

TRACK-IT

NEW

TRACK-IT is a hardware device and software needed for digital/analogue output at 1000 baud (programmable) using a high 16-bit parallel 8255-compatible using standard 40 pin disk drive plug and socket. For other modifications or conversions contact:

Track-IT is a very high speed system. Load up your software and TRACK-IT will display the track numbers that the software generates as it reads or writes to the drive. With some software (if the disk is empty, track/byte and sector fields) is being generated.

TRACK-IT is ideal for hardware or as an introduction to what the software is capable of doing with the disk drive.

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JASON HOLBORN describes the contents of this month's final fantastic dual-format floppy disk.



ON THIS MONTH'S DISK

ST

AMIGA

SPHERICAL

42

By your hand at the first four levels of Rainbow Art's third arcade blockbuster. Guide your character around though some of the increased contents of arcade action and design some decidedly wacky monsters that we had to turn your day!

TOOL

42

Databases need not be boring and TCOB is most definitely proof of that. Create and maintain databases on any subject with the kind of ease of EDO's packages. TCOB allows you to manage not only text, but graphs too to add.

FEEDING

44

Feeding is for all of you who have ever lost valuable data at the hands (heads?) of some malicious disk drive. Stop losing documents at your disk drive and start enjoying the pleasures of this life-saving utility.

EXPLODE

42

Since your brain before it gives up on you and runs off to join the circus, Explode is a game with a very rare extra ingredient - congeniality.

WICKED

42

Supernatural goings on are the order of the day with Activision's deceptively original game. Will you triumph over evil or will the darker side of the hand win the battle for the cosmos?

MANDELSHOW

44

Maths was never this much fun when at school. Explore the colourful, fascinating, chaotic, and infinitely complex world of fractal graphics with your trusty Amiga as your companion.

VOYACMANDE

42

Give your AmigaDOS batch files the kind of strong handling power that you have dreamt about. With MCommands, your batch files will be faster, more powerful and more efficient.

MS UTILS

42

Add a number base converter and a very handy calendar to your arsenal of Wordbench's utilities. Never again will you be late for a date or baffled by binary.

BEFORE YOU START

The first thing to do when you get your ST/Amiga Format cover disk is to make a back up copy of it. Full instructions for this are given on page 46.

Before you use any of the programs read the instructions on the following pages. If you have any problems check the documentation on the disk itself. If it still won't work see page 46 for details of how to get a replacement.

WICKED



The constellations are rather than of types as well as some. They are and the first one is: Wicked.

SPHERICAL



Wicked, wicked, wicked and more stars. All the ingredients of a great game from Rainbow Art.

EXPLODE



Wicked is great! Then you might just be ready to explode. The rules are simple, winning isn't.

MANDELSHOW



The Amiga's computing power is the only tool on the fracturing applets of the Mandelshow set.

EARN

£800

SEE PAGE 44

All you have to do is download the ability to write a word for program and have it featured on our Diskworld.


BT

SPHERICAL

PROGRAM: BY RAINBOW ARTS, DISTRIBUTION BY HARVEY MACHINES, COLOUR: 8 BITS
FILES: STARTUP.PRG & CTH.BRG

Spherical is the latest programming masterpiece from the West German software house, Rainbow Arts. The game will take you on a magical journey into a land of wizards, monsters and magic.

You play the part of a wizard with various weird and wonderful powers to aid you in your quest. Your aim is to guide your magical sphere through more than two increasingly difficult levels, overcoming all obstacles that you may meet up with along the way. Life is made a little harder for you if you manage to collect the bonus objects which increase your power to end points.

In Spherical, you must learn to use the powers that you acquire during your battle through the different levels.



Never mind the huge monster, how do you get to the next level?

Learn to harness the explosive power of fireballs and create footbots to help you find the teleports that will transport you on to the next adventure.

GETTING GOING

To start the game double click on the STARTUP.PRG icon from the Desktop.

SOME HINTS

When the game starts you have 30 seconds grace before the sphere starts to roll. In this time you need to create a path for the sphere to the portal, back in the sphere as it can't move, and collected as four glass. You can enter the sphere not before the 30 seconds is up by typing "T".

If you collect a floating hand it will be added to the arena. If you fall off the enemies on the screen.

You can pause the game at any time by pressing the spacebar. To begin the level again press the ESC key.



Place one mine piece on the square and it will become unstable and explode.

BT

EXPLODE

PROGRAM: BY P D. HERRS
MACHINE: ALL SITS
FILES: EXPLODE.PRG, EXPLODE.DOC

All this mindless arcade violence cannot be good for the old grey matter. Every one and then, you need a trip down to the local brain exercise centre for some quick mental gymnastics. What game can possibly reach the parts that other games cannot? Step aside Xmas, step aside Dungeon Master, for Explode is here.

The object of the game is to fill the entire board with your own pieces.

You do this by placing your own pieces on the board. Each square, depending upon its location on the board, can only handle a set number of pieces before it becomes unstable and explodes, sending fragments into all adjacent squares and capturing your opponent's pieces, time it right and you can set off a chain reaction.

HINTS AND TIPS

Explode may look like a very simple board game on the surface, but the more you play, the sooner will come to appreciate its heavily strategy based gameplay. The first thing you must do is to try and capture as many of the corner pieces as is possible and then work in to the centre, gradually capturing your opponent's pieces.

GETTING GOING

You can load Explode by double clicking on the EXPLODE.PRG icon on the Desktop. Explode is designed to be run on a low resolution, colour ST but it is also perfectly playable on both medium and high resolution SIs. Full instructions, including a run down of the rules, are available within the EXPLODE folder.

AMIGA

VCCOMMANDS

PROGRAM: BY TOMASH PAUL

MACHINE: ALL AMIGAS
FILES: VOLUME1.VOL, VOLUME2.VOL, VOLUME3.VOL, VOLUME4.VOL, VOLUME5.VOL

Like to know who has used a system based on the professional operating system line and they soon starting caring in also how powerful the Amiga's old



VCCOMMANDS provides you with all the tools you need to produce innovative batch files.

mand line interface is. Using full complete applications can be written in so time at all going what is called shell scripts. These are programs written completely using DOS commands to be run in AmigaDOS batch files.

The thing that separates the scripts from Amiga batch files is their extensive string handling and decision making facilities. The VCCOMMANDS, you can add string handling to your batch files.

VCCOMMANDS is a collection of six AmigaDOS commands designed to allow complex string manipulation within your batch files. All the commands are designed to work on 37 control storage areas (variables) if you like that can contain any strings.

They have many uses. To read, for example, use VCCOMMANDS to protect your data by making the user enter a pass word before the rest of a disk. StartUp-Sequence is even used.



AMIGA

SETTING GOING

Commands is designed for use from the Amiga's command-line interface (CLI). The first thing you should do is to copy them to the C: directory of your work disk. Full instructions on how to use Commands are in the README-1.doc file.

AMIGA**WE UTILS**

PROGRAM: BY LAWSON KLEY

MACHINE: ALL AMIGAS
FILES: CALENDAR.COM, COMP-
VITER.WE_UTILS.DOC

The Calendar and Converter programs, collectively known later as WE Utils, are two little programs that deserve a place on every self-respecting Workbench disk.

We won't insult your intelligence by telling you what Calendar is sufficient to say it isn't a consultancy tutorial. The program reads the current date from the Amiga's built-in system clock

with one installed as standard, converting numbers between binary, decimal and hexadecimal can be a pain on even the tamest of boxes. This, then, is where Converter can help - just select the base that the original number is in, enter it using the mouse and then select the base you wish it converted to.

SETTING GOING

You can load both Converter and Calendar by double clicking on their appropriate .com, full instructions for using these little gems are in the file WE_UTILS.DOC.

ST**TOOLS**

PROGRAM: BY M. F. AUBURY

MACHINE: ALL STs
FILES: TOOLS.PRG,
TOOLS.DOC

TOOLS is a database program that lets you to save the name of databases in the face of overwhelming hostility. The traditional image conjured up by the word 'database' is of an incredibly dull paper screen filled with even duller text. Not so, you've got an ST which has one of the finest windowing environments on any machine and it has high resolution graphics, so why not use these in a database?

TOOLS uses both of these facilities to full effect. With TOOLS, you can import graphics with ease



■ The Demonstration Database lets you keep track of the computer world.



■ Full-featured of the built-in tools, both Converter and Calendar are waiting at the Workbench.

and then displays the days of that month in a little window on the Workbench screen. To change the date displayed, you'll have to load the Preferences tool which can be found on your Workbench disk and change it from there.

Converter is a tool designed for the programmers among you. When you've got a number base converter disk implanted into your brain (all good programmers come



■ TOOLS will also allow you to import graphics.



■ Starting out on your mission against the dark forces.

WICKED

PROGRAM: BY ACTIVISION

MACHINE: ALL AMIGAS
FILES: WICKED, WICKED.DOC

This month's Amiga demo is of the soon to be released game by Activision, Wicked. It's a battle of good and evil that mixes arcade action with tactical planning. You play the good guy who's out to save the universe from a fate worse than death.

First is spending through the 12 mystical constellations and read the shipped, each constellation has three stars selected with evil and you have got to stop it. The cover disk demo contains one of the 16 stars that are being problems.

Full instructions on how to play are included in the game in the form of a tutorial style guide to the game.

If you want to skip the instructions then just press fire on the joy stick and you can go straight in there and start playing, but it's advisable to read the instructions the first time you play.

The only thing that you need to know concerns the control in the centre of the playing screen.

During each day and night links are set by the sun or moon positioned the symbol splits in two, and a hand card appears. Simultaneously a globe is thrown out and if you catch the globe something happens to you, either good, bad or debate able. You can tell what will happen by the hand card, but you'll have



■ Big trouble from the evil powers in this fourteen stars. Your power settings are recommended by double click stars pointing from your opponents constellation.

must be working out what each of the cards does if you find out the hard way.

SAVING YOUR SOUL

Wicked can be loaded by putting the cover disk in the drive when asked for the Workbench disk.



■ The blue evil portal sends the spaces spinning around the stars.



and the whole program is also completely GIM based. But that left us, 2006 could and quite easily claim to be the earliest software in existence, even then.



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over 200,000 defective units shipped
in 1995-1996

The process of setting up and maintaining your database is simplicity itself and is probably faster than any database you've ever used before.

FOODS can be used not only as a database but you could even try to set up an expert system using its excellent reasoning system as well. This database doesn't really need instructions on how to use it but, in the name of tradition and to keep you happy, we've included complete instructions in the form of a 1,000-text file.

Abstract

You can install TCOS by double-clicking on the TCOS.PNG icon on the Desktop. Full instructions are included in the TCOS folder.

100

PRODUCED BY TREVOR SCOTT

RESEARCH PROJECTS: All of the following projects are available for students who are interested in research. Projects are available on a first-come, first-served basis.

Continous states that if you possess 100 disks and n out of that 100 disks - only one is of value to you, that particular disk will be the



■ **Overlaid** appearing in multiple places along Super Mile corridor as well as

first to be corrupted. If you've ever lost all your valuable disk data, then Fdisk will be the answer to your prayers.

Fixed, not only files to save your situation files, but will also attempt to repair your errors, if found, on your disk. No guarantees though.

[illegible]

You can load Findex by double clicking on the FINDER-PMU icon on the desktop. Full instructions on all Findex's key controls are available within the FINDER index.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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MANDELSON
PROGRAM BY MICHAEL
MACHINER ALL ASPECTS
FILED MANDELSON
MANDELSON (C) STAFF
BOSTON (C)

Fractal graphic generators come in many different forms, ranging from the classic Mandelbrot set through to the increasingly 3D landscape generators, which seem to pop up in everything from Star Trek movies to computer games. It doesn't take a brain the size of two planets to work out that **Mandelbrot** is named around the Mandelbrot set as formulated by Benoit Mandelbrot.

For those of you who have never encountered the Mandelbrot set before, it is a graphical representation of a complex mathematical expression. The fascinating thing about Mandelbrot's is that the more you zoom in, the more complex the resulting shape becomes. Although the area is finite - lying within a circle defined by $x^2 + y^2 = 4$ (basic mathematics folk) - the edge is infinitely complex and of infinite length.

Modelboxes require a lot of calculations, and even with a powerful processor such as the 68030, they can take a very long time to produce, so go and make yourself a nice cup of coffee and be prepared to wait!



■ This is the entire Marvel Super Hero Encyclopedia, complete with 1000s of characters, powers, weapons, and more. As you read the entries, a whole new world of superheroes will be revealed.



YOUR PROGRAMMING SKILL COULD EARN YOU £800

Name _____ Address _____ _____ _____ Phone _____ (Daytime) _____ (Evening) _____ My program name is _____ For ☐ BT ☐ Amiga Approximate total size of files in Kbytes: _____K (we cannot use programs longer than 200K; shorter submissions, under 100K, stand the best chance of fit in a: ☐ Game ☐ Technical tool ☐ Business utility ☐ Art program ☐ Music program ☐ Educational ☐ Miscellany ☐ Other _____	BRIEF DESCRIPTION: _____ _____ _____ _____ _____ Checklist (please tick): ☐ Standard addressed envelope for return ☐ README.DOC explanation file on disk ☐ Printout of README.DOC file (if possible) ☐ Name, address, machine type written on label ☐ Disk certified virus free IMPORTANT - Please sign this declaration: This program is submitted for publication by ☐ Format or Amiga Format. It is my own work and has not been submitted for publication elsewhere. I claim my national name and glory. Signed _____ Date _____	If you've got one program for either BT or Amiga either you think other readers would find useful, interesting or amusing, we'd like to know 1. What your own program is inspired by 2. Why it's a better & faster solution than the disk which contains exactly how to use your program 3. What is the result, sign it and send it without delay to: Games Editor Amiga Art Editor (please specify one) and then if you have one to damage the mag) You could win a share in the total prize money for the best program each month.
---	---	--

Here's your chance to get your mitts on ASAP's fabulous 40Mb hard drive for your Amiga A500. Simply answer the questions below and pop a card in the post - you could be the lucky winner of a quality hard drive courtesy of ASAP and ST Amiga Format.

WIN AN AMIGA HARD DRIVE



Little Johnny has 14 Amiga disks - four of them are half filled with utilities, seven of them are 75% full of PD programs, while the rest of the Buggies are completely packed with applications and data files. Remembering that each Amiga disk can store 880K and that Andrius has 40Mbytes (40860K) of storage, work out how much room will be left on the hard drive once Johnny has transferred the contents of all the disks to the hard drive. Write your answer - in K - on the back of an envelope or postcard and get it to us as soon as possible.

Whether you use your machine for business, creativity or leisure, your Amiga system will benefit by having a fast, reliable and high capacity storage system. Using next to a 40Mb Andrius delivers 40Mb of storage capacity - which is equivalent to over 45 diskworth of software - and can shift data 10

times faster than floppy drives. Once you've used a hard drive you'll never want to go back to floppies.

Andrius's sleek design and colour choice means it will look out of place beside your Amiga 4000. Your system's performance will be improved so much with Andrius that you'll

wonder how you managed without it.

If you want to find out exactly what Andrius can do for you, turn to our feature on hard drives starting on page 50. Once you've considered, answer the three questions below and send your answers on a postcard or the back of a stick-on envelope

to AMIGA HARD DRIVE COMPETITION, ST AMIGA FORMAT, 4 QUEEN STREET, SOUTH GOS BEI. The first entrant picked out of the hat - with all questions answered correctly, of course - wins ASAP's Andrius. Tough luck everyone else.

All entries must reach us by Thursday July 15.

Use a hard disk at your peril - once bitten you'll never be happy with a floppy again. Format's hard men take the risk.

DRIVING FORCE

HOW IT WORKS

Hard disks operate in a similar fashion to floppy disks. The arm and heads of a hard drive unit are inside a sealed chamber. A hard disk is much faster, more reliable, and stores many more times the capacity of a floppy. The speed and precision of a hard drive results in a greater information density and shorter access times. Floppy disk drives spin from 360 to 300rpm depending on their design. A hard disk drive spins at 3,600rpm.

The hard drive head is designed to float on a cushion of air several microns in thickness as it glides over a rotating disk, better known as a platter. The platter is accurately machined and very rigid (unlike a floppy). There are usually two or more heads in each hard drive with one or two heads on each side of the disk, therefore there is various sizes and will have from 150 to 800 cylinders (dependent on the tracks on a formatted hard disk).

There are two common hard disk formatting techniques: MFM and RLL. RLL (Reduced Length Limiting) provides 30% more data storage space than conventional drive MFM (Frequency Modulation) format. Most drives can be formatted to either MFM or RLL, specifications for a different drive controller is needed in each case.





Floppy drives are fantastic at first — fast, reasonably reliable and forgiving on storage. The more you use your system though, the more you realize how handy extra storage and even greater access speeds would be. Only a hard disk can provide you with the necessary power.

You must, however, be sure you need a hard drive. If you're a dorker for shoot-'em-ups then there's little point in investing in a hard drive — most arcade action games are protected and consequently can't be copied across. That said, there are a growing number of games — mostly from the States and mostly adventures — that allow you to backup to hard disk. Things like *Goldrush*, *Leisure Suit Larry*, *Dragon's Lair*, *Rogue Rabbit*, and *Zork Jans*.

For creative use a hard drive is a must. DTP actually becomes a joy. When you've got several fonts, cutouts and text files to load and save, you need something that's going to do the job quickly. Animation packages, graphics utilities, sound sampling software, MIDI applications, word processors and programming tools all generate an enormous amount of data. Floppies really aren't the solution.

Our last look at hard drives for the ST and Amiga was over six months ago. In that time there's been a small scale revolution with drive prices plummeting and a string of new low-cost drives appearing. Here's what to look for .

AMDRIVE

CDROM • Amiga A500/A5000 •
ASAP, Gateway Business
Centre, Briggs Road,
Bournemouth, BH14 3BT (0754
288000) .

ASMP's Amdrive is available in two versions: an external model that connects to the A500's expansion port and an internal model that fits into one of the A5000's zero slots. Both versions offer 40Mb of storage.

To add to the confusion, there are

UPGRADE DETAILS

Third Course can upgrade an Atari 5804, 5805, Megafix 38, Megafix 48, Supra, Triangle or Copmate with a much faster and higher capacity drive. For example, an 5804 could be upgraded to a 5804b formatted Winchester drive.

This drive not only provides 80% more capacity, but offers 25% more performance. It also offers mechanical head auto-parking and a far better set of software utilities.

This sort of upgrade costs £295. Talk to Third Course on 0271 32464.

USING A HARD DISK WITH KICKSTART 1.3

Before the release of Kickstart and Harddisk 1.3, Amiga hard drives were embarrassingly slow compared to serial units on machines such as the ST and PC. With the release of 1.3, Commodore set the record straight by carrying out a major overhaul of the way the Amiga handles its hard drives.

There are essentially two new aspects of hard drive handling under 1.3: the new FastFile System (FFS) and auto-boot support.

FFS is designed to speed up all hard disk operations. Commodore claim speed increases of up to seven times. The only negative point of FFS is that it is not compatible with the older (and slower) system, this means that to take advantage of FFS you'll have to reformat your hard drive.

To take advantage of 1.3's auto-boot facility, both your machine and your hard disk will have to support the feature. Your machine must have Kickstart 1.3 installed and the hard drive must have been FFS'd built in. So check these things when buying a drive.



SOFTWARE SECURITY

Hard disks are not immune from corruption. Installing even word files or backup 20MB of data a week up utility is needed.

Superdisk for the Amiga from the Amiga Company will backup any or all of the files and directories from your hard disk onto SuperDisk (this may be entered selectively).

Both the Amiga CyberSword 800 (8778242) and 800 Marketing (889) 88833 will SuperDisk. Price is a few grand under \$25.

TurboEa from Microval (876) 88886 is the best for ST users. As well as hard disk backups, TurboEa lets you do Superdisk your hard disk and create a data center. It's (284) well spent.

two years of AMOS drive, a standard drive without auto-booting support for \$299 and an auto-booting version for an extra \$50. If you cannot afford the initial extra expense of the auto-booting drive, AMAP offers an upgrade service for all existing Amivine owners. The A2000 version supports auto-booting as standard.

To take advantage of the auto-booting facility, your machine must be fitted with a Reolivet 1.3. AMAP can do the upgrade for £75.

Installation is very straightforward on an AMOS - all you do is remove the plastic cover from the expansion bus on the right hand side of your machine and slot the drive firmly in place. The A2000 Amivine draws its power from the host computer while the A2000 version needs to draw independent power supply.

The Amivine comes pre-installed under the new 1.3 Fast File System which helps to speed up drive operation considerably. The unit is both sturdy and reliable and is an ideal choice if you're in the market for an Amiga hard drive.

Jason Pollock

THIRD COAST

From 0448 95 8 off Amigas, MA57, Unit 1, Dippens, Brackley, Ayles, Bedford, MK27 8NN (077088 824).

Third Coast's hard drive is available in several configurations: 37MB MB (87779), 50MB HLL (87479), 65MB HLL (87479) and 30MB (87799). The disk comes formatted and partitioned. Partitioning splits the hard disk into smaller, more manageable, sections, and each part is given a drive identifier: C, D, E, F, etc. A maximum of 12 partitions are allowed.

The hard drive has a DMA+ port which means the ST can make use of



other DMA devices. The laser printer and CD-ROM drive, for instance.

Several public domain hard disk utilities are provided which, amongst other things, allow you to format the drive. Unless your hard disk starts throwing up errors there should be no need for reformatting. You certainly wouldn't use this program for less: it takes 20 minutes to format a disk.

Third Coast's master drive also contained a tape streamer within the same unit. The streamer is used for backing up your entire hard disk - it's fast and very reliable. The streamer medium used looks identical to an audio cassette, but it's not the same. The streamer tapes are capable of storing 155MB of information. The stand alone unit isn't cheap (87799), although compared to similar systems for PCs it is. A tape streamer

plus 65MB hard drive in one enclosure costs £1299. Details of other configurations are available from Third Coast.

Third Coast's drives really do represent good value for money. The drives are much cheaper than other manufacturer offerings - Atari's prices, for instance, are put to shame. Although the Third Coast units don't match the ST's colour scheme, they are designed to last and have enough room inside for two hard disks or a hard disk and a tape streamer.

Richard Mordant

TINY TIGER

From 0448 95 8 off Amigas, MA57, Unit 1, Dippens, Brackley, Ayles, Bedford, MK27 8NN (077088 824).

Along with the drive you get a cable, a 24-page booklet on DOS utilities, operating instructions, a boot disk and a 16-Mbit power pack. The contents of the package tell you this is no ordinary hard drive. Since when has a hard drive been run from a power supply? And the cable fits into the parallel port.

The drive is roughly the size of a standard double column disk box - very small and neat. The front panel of the Tiny Tiger has a green LED which flashes when the drive is active. There's also an illuminated label telling you the capacity of the drive. This should read 30MB, but somehow 40 appeared on the source model.

The rear of the drive sports three 25-way D-type connectors. These operate as a through parallel connector, a connector for a second storage device and as a gateway to the rings.

Setting the drive up could not be easier; it's just a matter of using the supplied cable to connect Tiny Tiger to the rings, inserting the Free-Spart boot disk into the internal floppy drive and waiting for around 30 seconds. Hard drive auto-booting isn't possible.

Because the drive is an American import the manual tends to be misleading; it takes several months to figure out how to set up the drive. This, say MA57, is going to be rectified as a new manual is in the process of being written. There is no command to park the drive head before switching off, a serious omission because irregularities of information can get away if the drive is jotted and the head hits the surface.

Overall the drive is well built and is, surprisingly fast considering data is being pushed through the parallel port. It's also reasonably cheap. However booting is only possible via floppy and is consequently slow and the very unusual use of the parallel port does not inspire confidence. The power supply and connections are also less than satisfactory. North investigating, however.

Kevin Cowardale

HARD DRIVEN FACTS

Drive	Machine	Size Mb	Price £	Manufacturer	Phone
Third Coast	ST	22	399	Third Coast	0257 436484
Third Coast	ST	55	549	Third Coast	0257 436484
Third Coast	ST	130	963	Third Coast	0257 436484
u20	ST	20	399	Systems 2000	0993 554205
u40	ST	40	499	Systems 2000	0993 554205
u70	ST	70	699	Systems 2000	0993 554205
Supra 30	Amiga	30	700	Fraser	0423 530537
Supra 12	ST	32	500	Fraser	0423 530537
Internal	Mega ST	42	850	Fraser	0423 530537
Barocore	Amiga	20	550	Barocore	01907 3636
Barocore	Amiga	40	650	Barocore	01907 3636
Barocore	Amiga	80	950	Barocore	01907 3636
Tiny Tiger 30	Amiga	30	450	MA57	077952 234
Tiny Tiger 42	Amiga	42	580	MA57	077952 234
Tiny Tiger 84	Amiga	84	900	MA57	077952 234
Amivine	Amiga	40	799	Amivine	734 280122
Megabyte 30	ST	30	499	May/501	01300 33099
A2080A	A2000	20	514	Commodore	0628 770088
A2090A	A2000	40	845	Commodore	0628 770088

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Amiga 5000 80 MB	\$4499.00
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PAGESTREAM

Truly professional desktop publishing has been a long time coming to the ST and Amiga. With PageStream NEIL SARGENT thinks it has finally arrived.

The much heralded, yet little seen, desktop publishing package PageStream is here. The offspring of Publishing Partner, the first DTP application specifically for the ST, it is now a fully matured program with all the hallmarks of sophistication impressed on it.

In page approach and look it is very much like the granddaddy of them all, PageMaker, but it also possesses many features found in other high-end (and high-priced) Macintosh applications. Its very welcome printing of 4711-30 might suggest that it is, yet another bad gift DTP package. Budget-priced it may be, but budget-features – no self PageStream is a selective synthesis of the best parts of other programs and a good few of its own innovations besides, based on the original Publishing Partner. Naturally PostScript-compatible scalable fonts and full colour separations are among the features, but there's more, a lot more.

The latest entrant to the DTP world comes on five disks, containing pro-

gram, fonts, utilities such as spelling and self hyphenation dictionaries, clip art, printer drivers and ready written import modules.

The manual for this American program is being rewritten by a team of British authors which should give it a more homely touch and proper spelling.

PageStream is fairly bursting at the seams with goodies and it is to the credit of the writing staffs of chief programmer David Kucumier that he has contained the POSTSCRIPTS to just 37.1K, enabling, theoretically, owners of 500PS 512s and Amigas to operate it. Realistically though a minimum set-up of a single drive, mono screen and a one megabyte machine is recommended. A printer would come in handy too.

WORKING CLEANLY

Going across to Publishing Partner will find themselves perfectly at home with its big brother. PageStream's dialogue boxes are now more akin to standard GEM although they keep the feel and look of PP with some enhancements. It has retained the familiar and overall concept of creating pages or documents with movable frames or boxes (object).

The second behind PageStream's intuitive and easy approach to the job of putting together pages lies in the combination of an extensive menu bar layout and the comprehensive toolbox section.

The toolbox can be positioned anywhere on the screen. The toolbox's icons include a text column object, picture reshaping icons and a comprehensive set of drawing tools with tools for arcs and elliptical arcs.

The bar has six sections with pull down menus, from left to right: File, Edit, Layout, View, Style, Format, Text, Object and Global. A great deal of thought and work seems to have gone into this. The menus and what is contained in them are in logical and interesting sequences.

Because of the capacious menu bar and its instant range of options, the DTP operator now has an at-a-glance choice of 132 initial selections. Only occasionally is there an example of a window with a window. Coupled with the streamlined facilities, the approach makes designing and editing simplicity itself, and a lot of fun – which is what it should be.

PageStream is fully WYSIWYG.

Large characters, in whatever screen font, are blocky or jagged but PageStream's printed output, using scalable outline fonts, from a swashes dot matrix or laser is truly superb. And at the end of the day that's what really matters in professional desktop publishing.

A large variety of printer drivers come with the package, including ones for colour, PostScript and LaserJet machines. You can of course print to disk if you choose.

PageStream can take text from almost either ST, First Word, and WordPerfect for the ST and, WordPerfect for the Amiga. ASCII files are also opened for but they will have to be edited. If your favourite WP is not supported PageStream's own text handler is more than adequate for direct and speedy entry.

Graphics or picture handling is comprehensive and IMG, JIF, TIFF, PEO, Degas (including compressed), GEM Metafile, EPS (Encapsulated PostScript) and RAS (Ras) (Encapsulated PostScript) provide the facilities to harness scanned images, including colour ones.

Colours are limited only by the screen mode you are in because up to 40 colours can be defined using the RGB – red, green, blue – values. Depending on your printer you could use a spot colour or grayscale background for text. A number of colour printers are supported.

OBJECTIVE APPROACH

Text can be entered either directly into predefined columns or 'text objects' can be created for letters such as headlines, slogans, or special effects like movie blocks. Either way it can be treated as an object and moved around the page, or copied, pasted or appended to other page or document. In its column form it can be squeezed into narrower columns without losing its point size but it will leave you with an overspill of text. It is unable to stretch a text column as it will lose its paragraph format. It's far easier to alter any elements, such as point size, typeface, or style attributes by highlighting it and changing it from within the Style menu.

The laser highlighting feature will enable you to instantly recall on screen the exact typographical properties you gave to any section of text.

PageStream recognises two class-

TIMES ARE-A-CHANGEABLE

With the use of Postscript printing is fast. Two fonts, including the standard Times (italic) Fonts for copyright reasons and Helvetica are usually included. Together with a large selection of style attributes this enables you to produce scores of different typographical effects.

The program provides a user-adjustable system for width and height, giving literally thousands of permutations of point size. Using the X and Y size you can specify, for example, 10 point width and 80 point height. You can direct the program, (subject to memory) to produce text and line sizes from just a point to 1,248 point. If you want to you can create different style guides by using the 'Style' facility. Beside point sizing eight other measuring systems are supported.

With the ability to freeze line character spacing (leading) to a tenth of a thousandth of an inch (as set in a Post-Of an 1000), together with advanced underlining and shading, PageStream has given the user the utmost typographical control.

Text can be made to flow around graphics. This surround facility comes in two modes and will adequately handle the most gaudy of objects.



■ PageStream can customise the existing fonts in a nearly infinite number of combinations giving total typographical control.

GROUP THERAPY

One of the most important features of PageStream is its ability to group objects. Imagine that you have created a complex layout: a set of advertisement pages. It is made up of lots of small graphics and text: a dozen different types of text, of differing size and font. You have drawn a thick line box around it to complete the set. It is your work of art and has taken time. You decide that you want to place it somewhere else on the page or copy it onto another page. With most DTP packages this choice that your new item has become two separate objects - all of which have to be moved, copied, pasted and re-aligned. It is a tedious procedure, involving constant trips to the clipboard to further ensure it can be repositioned.

With PageStream you simply drawing a rubber-band around the entire collection of objects and using the Group command of their selected are combined into a single object called a group. A single set of sizing appears will appear around the illustration and you can treat your new object just as any other: sizing, copying and pasting and then appending it to another document. The group will retain all of the original elements you gave it. Such a facility is a boon to anyone who regularly has to reproduce a complete design of graphics and text, such as a layout or a standing advertisement in a magazine or magazine.

Meanwhile,

if of graphic files to map patterns, such as Degas, Degas compressed and JAG files, and object-oriented drawings such as AutoDraw. Once they have been imported in they too become objects and can be clicked on and moved around the page.

A similar function is the Select All option under the Edit menu. By selecting the command all the objects on a page are 'locked up' and moved or copied as a single object from one page to another.

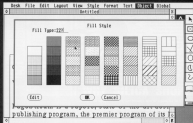
CREATING TO YOU AND ME

Its program is absolutely perfect and the main handicap that PageStream offers from it is that it is a little slow at updating or refreshing the screen. This can be speeded up somewhat through by using a technique called grepping. This allows you to make the program display a text under a pre-defined point size as a series of dashes instead of re-drawing large blocks of text. Screen re-draws can be further quickened by clicking off the Show Pictures function. One screen function that is a real boon is the Variable Zoom feature which can magnify a selected area up to 1,500 per cent of actual size.

PageStream allows you to make your own style sheets and number every



■ The first stage when creating PageStream is deciding paper size. There's everything from business card size right up to doublepage format size. You can also determine page orientation, whether portrait or landscape orientation. You can define your own page size if none of the standard page sizes meet your needs. You must be careful not to create pages larger than those screens.



■ Backgrounds and objects can be filled with a custom pattern or text. Text can be anything from 0% (white) to 100% (black), while patterns range from horizontal lines to very complex designs.



■ You can set up 'whole objects' for your design needs. These allow text and graphics work on separate and text size. Producing a complete document is made much simpler and many adjustments can be avoided.



■ Objects, including text, can be expanded and altered. These objects are particularly useful for text - boundaries can then define the edge of a page are easy to achieve, something which many Macintosh programs would do well to emulate.



■ The flexible zoom facility allows for precise layouts.



■ Text can be made to run around the most complex of objects.



■ The fonts and powerful typographical control features also help escape for interesting designs.

stand as it is intended. You can also specify your own master pages. Professionally created templates for the newswoman to DTP are not supported and this would be a welcome addition to any future upgrade. Three tutorials, however, guide you easily into the intricate workings of this complex yet easy-to-use program.

As mentioned, it comes with 10 fonts, which is more than enough, but it would have been better if SoftLogic had dispensed with at least a couple of them, notably Oriental and Creative of Letters, in return for a good thick, condensed sans serif typeface suitable for impact headlines. The nearest it can provide for a newspaper style 'Lead' headline is Helvetica Bold. At this point it is worth noting that tabloid-sized newspapers are catered for. The maximum on-screen document size is 35.2 by 35.2 inches - not quite large enough for a broadsheet paper, such as The Independent. Design print-out page sizes, including ones for business cards and stationery, are in the Layout menu.

PageStream is a mine of glorious features and useful features. Among these is a screen colours editor, which with a mouse set-up means you can work with white on black, a facility to set and save macros which allow you to perform a sequence of common editing operations by pressing a single key, and support for the full ASCII character set, including scores of special characters such as bullets, trademarks, copyrights, registered trademarks and foreign language symbols. You can also adjust to guide and grids, use text routing, add colour notes, insert pages, add fonts, convert Postscript Printer font to PageStream and add to built-in spelling and hyphenation dictionaries. For the price you get and this is undeniably a power package, virtually every command can be given via the keyboard.

POWER TO THE PEOPLE

PageStream comes with so many features that it is impossible in this space to describe them all - suffice it to say that I cannot stress enough the truly remarkable quality of the printed output.

PageStream is a milestone in DTP history on the ST and Amiga. It provides almost every feature of other programs, some costing more than three times its price - plus, some of its own specialities.

PageStream is just the start as it gets that the ST and Amiga computers need to put them fairly and squarely in the high-end desktop publishing map.

It's only two disadvantages in those of all powerful DTP packages - the hardware needed to use them is no practical way. As ever a megabyte or two disk drives are a good idea and you can stretch to a hard disk and become so much easier.

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The first correct answer pulled out of the pocket will win the job title and can start worrying about where they're going to eat since they get 8 home, and the next two will receive a long ride pavel through their letter box. Send your answers (along with your name and address) to: 30 Food Camp, 37 Avenue Forest, 4 Queen Street, North 364, 14.

2) How many feet must be kept on the floor at all times when climbing down?

- | | |
|---|---|
| 1. What is the purpose of the study? | To investigate the effect of a new drug on blood pressure. |
| 2. What is the research question? | Does the new drug significantly reduce blood pressure compared to the placebo? |
| 3. What are the variables? | Independent variable: Treatment (New drug vs. Placebo).
Dependent variable: Blood pressure (mmHg). |
| 4. What is the study design? | Randomized controlled trial. |
| 5. What are the participants? | Adults with hypertension. |
| 6. What are the interventions? | New drug and Placebo. |
| 7. What are the outcomes? | Change in blood pressure. |
| 8. What are the results? | The new drug significantly reduced blood pressure compared to the placebo. |
| 9. What are the conclusions? | The new drug is effective in reducing blood pressure. |
| 10. What are the limitations? | Short duration, small sample size. |

2) How many balls are there on the table including the black?

- 

WU

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20) Only one entry per person. (Don't it strange how few hundred people called Wayne Post line at this same address?)

18) The authors' decision is that, (I read that means he'll be joining the military)

[illegible]

Outlook

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-
- Figure 1 shows six small images arranged in a 3x2 grid. Each image displays a different perspective of a rectangular block with a circular hole. The top row shows the block from the front, side, and back. The middle row shows the block from the top, bottom, and front. The bottom row shows the block from the side, back, and front. The images are labeled with numbers 1 through 6.



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SCREENPLAY

NEWS...NEWS...NEWS..

With the PC Show coming up in September, most of the large software houses are looking to hold back their big titles for release closer to the date. As a result, it looks as if the traditionally quiet summer months are going to be jammed into darkness, but not all is doom and gloom. Microsoft's summer line-up includes the much-awaited **BLOODYFINCH** and **PROBIE** as well as the **FALCON** mission disks. However it



Ascom is due soon and we should hopefully see some more US Gold conversions before autumn dawns. The games held up for the PC Stage Space Station's **Star Trek: The Next Generation** and **Star Trek: The Motion Picture**. **TEAM TANKS** and **Cricket: Parcel from Entertainment International** have been delayed but US Gold are responsible for some of the biggest hold-ups. The much-delayed **BETTER EUROPE**, **Snider and Black Tiger** have all better value of the summer than **Samurai** the original and **STAR: OF THE ART**. Microsoft games postponed last month, also look unlikely till well past the Christmas.

Meanwhile, **Quake**, the company that brought you **GAFFIELD** and have been threatening to release the sequel, **Garfield: A Whisker's Tail**, have decided to change their name to **THE EDGE** and work this momentous occasion by finally releasing this much-anticipated game. **BARRIS** is their latest project, scheduled for release in September which means we might just get to see it next Autumn.

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WIN A TRIP TO LABYRINTH



Emperor Bliz is a weird type of guy who's obsessed with destruction of the innocent. Now this might not be too bad if he hadn't arrived somewhere else to make babies, all of which have grown into headcases desperate to destroy all civilization.

AIM

The cities they destroyed have been ruined and have become known as Forgotten Worlds. But that's superior nations have been created to fight back against the evil and rescue the world back from Bliz. With the Emperor pre-

dicted by three dragons - the Golden Dragon, the East of its and the Pan-American - you get some power going to have a fair go ahead of you as one of its good guys.

STRATEGY

The game is split into four levels which take you from the Co-Sage, through the Dead Run and He-Heh World and into the God's Domain.

At the end of each of the four levels, you encounter an evil monster who must be lost in into submission using various



Level two features deadly snakes (usually activated across the landscape). You automatically lose the path towards the Dead Dragon who can only be destroyed by a host of firepower in the hand.



This shows the place to go to buy all the weapons you need.



Simulation mode play means that two characters can be controlled with a joystick each. This makes scoring your co-monsters for better if you can bear to work together.



The God of War features at the end of level three. As soon as you have encountered with a multitude of forces it's time to meet him. The God of War protects the fortress and was only to be destroyed by being at his monster.

PROGRAMMERS

Forgotten Worlds was programmed by Art, a Birmingham programming team. The Soviet was responsible for the 3D conversion with Chris Cooper writing for the Amiga. Brian Wilson, Richard Underhill and Warren McConner did the original conversions. The graphics were designed on the Amiga by Paul Weller. Before that was used and then the images were coded down to the 3D and 2D graphics engines. In all the game took six months of programming time to complete with all versions written on the Amiga machine. Amiga 2 was used in the coding of the 3D and Amiga version.

Art is going up to work with US Gold on a multi-media project, however, we have heard that it is a Canadian conversion is almost certainly their next step.



On your way to reach Bliz you confront a host of unlikely enemies. Even Bliz makes an appearance but this is just the real test.

quests - The
God of War
- you just
need a head
one of the

KEY

to far levels
in the City
State World
and into the

of the first
enter one
and be be-
coming whatever



to go the
the road.



on the game
and the
background



first.

However, you're managed to escape.

The City Scape and you make your way towards the entrance of the underground complex. The guards here are fairly easy to overcome although some of the robots make the occasional appearance just for good measure. Once inside, you must clear through potentially lethal gas pipes and on towards the next level. The first real test of your abilities is an appearance here although some good timing will remember this.

The other levels follow the same theme with a range of machines posing the way to an endless level of puzzles.

As you progress through the different levels you come across the occasional shop but no amount of Sennory's you'll ever see. Eight different types of weaponry are on sale ranging from flaming swords to laser pistols. Depending on the number of tokens retrieved during play, you can purchase enough firepower to make sure you become a war's best. These items can be collected by firing a few blasts at the enemy and catching the blue crystals he leaves behind.

The broken thing to master

in Forgotten Worlds is the joystick movement. With my fire button depressed you must move in the usual way but if you press fire and hold the joystick to either the left or the right then you begin to rotate around at speed. This means that you can aim your gun in any direction and fire but if you get carried away during gameplay you can find your character turning round and round without successfully shooting anyone.

EFFECTS

The graphics are smooth and well defined although the Amiga ver-

sion is better in this department. The most striking aspect of the game is the colour and detail of a whole army of different monsters. Particularly effective are the large monsters which have been animated to be as menacing as possible although even then their movements are limited.

The screen scrolls relatively smoothly during gameplay with moments of battle freezing, a remarkable achievement for a Type 4 machine.

Sound effects are well handled and do little to live up to, however they do create the feel of atmospheric conditions to some good effect. However, during Amiga, the Amiga version boasts more impressive effects here.

ST - Input £19.99

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STYLISH



ANIMATION



MOVEMENT



PLAYING INTEREST



OVERALL 86%



Impressive graphics make this shoot-em-up visually brilliant particularly in this Amiga version.



Flashing away at the enemy will produce a token which can be used in all the shops.

Forgotten Worlds is another beautifully realised, impressive. However, it's one of the best US Gold have produced and with large, well-defined sprites, making up the different characters it quickly becomes an intriguing challenge.

It could be faster at times but it's still infinitely addictive. Mastering the joystick movement can become annoying, particularly if you're used to the more common 'hold down the fire button' shoot-em-up.

As part of our game competition issue, US Gold are offering copies of the game and Powers. All you need to do is send us the name of US Gold's No. 1 hit last Christmas. The first 20 lucky entries earned receive copies of the game and the first 100 will get their hands on a Forgotten Worlds T-shirt. Just send your entries to US GOLD COMPETITION at our usual address.

Mark Hughes

CONCLUSION

FORGOTTEN WORLDS

US GOLD



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POOL

FIREBIRD



■ The competition is played over three rounds with a consolation with 'Muller' Joe Barbara in the final.

Pool has always been a favourite game to play in the pub, especially when you've got a pint handy to keep your throat greened. Computerised pool games have been around for a very long time, but this is the first time that you can play in 3D. Unfortunately, this computerised version doesn't come with a pub built around so you'll have to settle for just playing the game instead.

The game is endorsed by the current European and UK champion 'Muller' Joe Barbara and if you're good enough you'll get to meet a computerised equivalent of Joe in the final. Before you take on Joe you have to battle your way through the quarter and semi-finals in which you meet opponents of varying skill. Each match is played out of three frames with the winner of the three going on to the next stage of the competition.

All other pool games are viewed from overhead and so movement around the table is unnecessary, but in 3D Pool it's essential. Not only can you move



■ When you get tired of playing the normal games, you can try your hand at trick shots, or even challenge your mate.

all around the table, but you can also zoom in and out and view the table from different vertical angles. The zoom feature is useful for planning those tricky shots. Change of angle also helps in lining up shots. An oval spot can be applied to any part of the ball and the power of the shot altered.

EFFECTS

If it wasn't for the 3D graphics then this would be just another pool game. Being able to view the table from any angle and the 3D

perspective does make the difference though. The 3D is done on a real and you can even see the light shining off the balls. Thanks to the 3D effect lining up shots is simple, although it takes a bit of games of practice to judge the angles correctly. You get all the sound of the real thing, with no exception of the drums, cymbals, etc. By the real thing, I mean the balls bump into each other. There are no tables either, which is a pity — most pool games lack the music from The Snig plays at least some of the time.



■ Lining up for a shot doesn't get easier, you still have to take into account the angle and the power of the shot. It's not as easy as it looks, but it's not as hard as it seems either.

ST-Music 1998

Single - 1998 Music



OVERALL 71%

CONCLUSION

Pool and snooker are games that require lots of hand-eye co-ordination when played on a table, but with a computer it's merely a task of lining the ball up using your eye and applying faith to exactly where you want and power according to a sliding scale. This takes away some of the skill required and removes a large portion of the fun.

3D Pool is better than most as you can see the table as a player would, but it's just not the same as playing against a potential Steve Davis in a dark and smoky room, the atmosphere's not there. That doesn't stop it from being an excellent game however and being able to play against another person keeps the interest level going when you've beaten all of the computer opponents, but it still leaves out the real thing in the long term.

3D Pool does have one major advantage over a normal pool table: it fits on your desk.

Gary Barrett



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in my first book,
My Father's House,
I was born in
1928 in a small town
in the South.

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WIN A DAY OUT AT BRANDS HATCH



If you're crazy about cars then don't miss our fabulous competition to win a day out at Brands Hatch, courtesy of Entertainment International. Just answer the questions below, drop them in a post box and you could win one of five pairs of tickets to a Formula 3 race.

Entertainment International were responsible for the infamous 1988 Crazy Cars and now it's your turn to sample life in the fast lane with five prizes. EI are offering five pairs of tickets to the Formula 3 race at Brands Hatch scheduled for September 10. In addition, you can go down to the pits and meet the drivers as part of a special deal arranged by EI.

The second prize winners will receive one of the lucky motorbikes currently being sold by EI. They're shaped like a missing wheel and with hot engines and a brilliant test, will make any one's lightning-quick. Finally third prize winners can get their name on copies of Crazy Cars II.

To be in with a chance of winning, simply answer the questions below and send your answers on a postcard or the back of a cigarette packet to: **ENTERTAINMENT INTERNATIONAL, BRANDS HATCH, KENT, TN11 9AT.**

COMPETITION OF AMIGAFORMAT FUTURE PUBLICATIONS, 1 CUPERT STREET, BATH, BA1 1EA. Please remember to write the name of your computer and your age on the card. The first 50 prize winners will be pulled from a hat on July 13 so no other entries can be received after then.

RULES

1. Competition entries must be received by July 13. Any received after this date will be sent into a random draw and not be considered.

2. Employees of Future Publishing and Entertainment International may not enter. Not even the boss.

3. The editor's decision is final and no correspondence will be entered into.

QUESTIONS

What make of car was the popular Crazy Cars II vehicle, modelled on?

The Crazy Cars II game sees you racing against an endless number of super-fast machines, who are they?

In which issue of ST Amiga Format was Crazy Cars II reviewed?

Apart from Brands Hatch, which other British race tracks host Grand Prix?



If seemed appropriate to review a game in which you're a pirate in the same issue that there's a feature on software piracy. Does your pirate's hat, hat up the Jelly Roger, infect your game and ship on your wooden leg for a voyage into the seventeenth century?

Before you begin your swash-buckling career on the Spanish Main you can choose your nationality: English, French, Spanish or Dutch. Go on, be a pirate and send those Spaniards to Davy Jones' locker.

Once you're ready for a life on the open water you leave port in search of adventure. You could of course be an honest trader and live out your sailing life in relative safety, but your dream won't be too far from it, they're pirates and they want ransom.



■ **Shogun Inc.**, Tokyo-based studio was given over and told there is little or nothing more to be done (see page 10)

A lot of time is spent waiting around the corner waiting the boat out to pull "big fish". Once he has, you can move in closer and if you think you can handle it go in for

PIRATES

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Butter, two butters are first of all carried out of cannon range and when you feel ready you can throw her hand to hand combat and leap into the enemy ship with a cutlery between your teeth. Hand to hand is resolved between you and the enemy captain in a simple fight with your handy cutlery. Win and you can add another ship to your fleet, lose and you'll spend some time in a stock and flow prison cell.

Out on the ocean you'll also have to contend with dangerous reefs, or you'll sink and then spend time stranded on a desert island with nothing to do. But not here, be in the sun and learn to respect the local rules (don't drink) should prove to be fun, where is the island?

There are times when you'll meet some unsavory-looking pirates with bits of treasure maps in sail, which may or may not be genuine. They're always worth checking out though because it's a damn right easier to dig a hole than it is to surface a ship-in-boss.

"Look! It's that promising sea-dog! Mr. Corliss! A ready group of 26 men asks to join your crew. Do you...
sign them up?
Take them aboard?"



■ There's more hope, a bit more strength and courage. King's said it thinking there's "more deliverance." There's still a chance for the city. But...

As the play progresses, you'll come across information about your family, who seem to have been captured and sent all over the Spanish Main. There are also some notes cut there that are much more than their weight in gold if you capture them and then ransom them off. And of course, be on the high seas just wouldn't be complete without some romance and some of the governor's daughters are very lovely.

REFLECT

Pinotes is a strategy game and as such sound is often the last thing that's added. Sound effects are simple explosions, but there are a multitude of tones with a definite 17th-century feel. When you're sailing around and in battle the graphics are small and unimpressive.

Fig. 10. When voltage is kept at 0V, the number of moving vesicles per 1000 is plotted against time and they are mostly frozen.

JT - June 2006

100

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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11. **What is the difference between a "strong" and a "weak" acid?**

Table 1

04/11/2015 17:25

CONCLUSION

At first glance, Hoated seems nothing more than a simple strategy game with a minimalist flavor, but extended play tells you otherwise, and you'll soon find that you can't stop playing. Choosing through the cards will take a long time, and that helps to keep you glued to the clock. Eventually you'll want to retire and live it all in luxury on a desert island, but make sure that (safety didn't) end there first.

[illegible]

Do you wish to select a special historical period?

4710th north
chicago
dunham st
chicago, il

What is your family name
(Smith, Jones, etc.)?

Ca Ar Co Fe Ni Pb Zn

Which special ability do you have?

**Chair of Foreign
Societal Participation
and
Societal
Participation**

■ **Single-front sets sell**
 Armed with his newly
 revised and enlarged
 list of new, Remick
 said that the pirate was
 already "in talks with
 some".

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is. The aim of Bloodwych is to save the kingdom of Moravia from evil forces. Your father, the king, and your kingdom are in danger, and it's up to you to save the kingdom. You must be collected in a special way. There are then taken to the king's tower where it is completed. The king's tower is the final boss. The king must be defeated using the crystal.

A GAME OF TAG

Celebrated eight-bit programmers, the Tagioni Brothers, have made their first move into 16-bit with Bloodwych. MARK HIGHAM went to meet them.



Did you know this was the unfired where Douglas Baker had his legs blasted off?" asked Tag, vaulting into the air like an imbecilically fat sun of a blazing morning.

"Yes," murmured a voice from the background.

"Was one thing I must say is that you have to mention Microsoft and what a great company it is," instantly responded Microsoft's PR woman, Cally Compas, who had come along to watch.

"Microsoft is a good company," responded Tag sincerely, casting a string of pearls about the magic of Microsoft.

The Taglioni Brothers have been in the game programming industry for longer than most. Previously their career has been focused very much on the registered sector and Microsoft is their first product to make it into the retail market. The likes of Red LED and Geydyl had emerged from the Slainlight stable which was masterminded by the Taglioni and survived right up until early last year. That was when Microsoft was first conceived.

The game is Microsoft's follow-up to Dungeon Master offering a fantasy strategy game in the Dungeons and Dragons vein.

Dungeon Master was Microsoft's major money-spinner, programmed for the IBM PC, and recently released on the Amiga. Where Bloodfoot means away from Dungeon Master is in its two player option. Two characters can be directed around the castle each observed from one half of the screen. Being a completely interactive environment, they can meet each other along the way and confront identical obstacles.

It was this novel idea for the game which first inspired Microsoft to look seriously at Crystal Quest, as it was then known, and concrete living in the project way back in March 1988.

"We initially designed the game around the 3D aspect before we used two players," explained Tag, quietly. "The game was Peter's idea." Peter is Tag's brother. "We felt it was an unusual idea and wanted to do it, as we went to Microsoft's Peter Dinkus and John Cooke to talk it over."

Red LED was a strategy game which was extremely well received and although Bloodfoot's features a totally different twist it's still the strategy war which seems to be Tag's strong point. He was hooked out of necessity for involving in Dungeons & Dragons so much that his games have dove into oblivion but it's a background which has given him a good start for this latest project.

"We usually spend about an hour thinking about what we're going to produce as we do actually working on it," observed Tag when asked to trace the whole design process from the beginning.

"I generally dream up the ideas and then let work on them and implement them," said Peter, nodding towards his brother.

"But, he came up with some graphics first of all and we used the limited animation available in Dages 3D to see if it was not too odd. If it is then I code it."

Usually and write scenarios and then insert them into a main control routine. It takes a bit longer than you might think. We started Bloodfoot with some definite ideas, but it just kept growing and growing as we shined at the time to make it official.

"There's a communication system in the game and it was getting bigger at the time in order to accommodate sub-features for each menu option and then I took it and showed it to my wife. Her first question was 'How do I see his two arms?' and I hadn't included that at all.

"The game becomes an obsession," confessed Tag. "Although it's still easy to become distracted which is why we have deadlines. Sometimes things are run but we tend to work on a day to day basis. I usually think to myself 'I'll get this bit done today' and I try to get it done before collapsing. If that I go to bed too late and wake up very tired, then work until I get tired again. This usually means working mid-morning and mid-evening. Luckily I can manage with just four or five hours sleep then I'm out for a couple of days.

"Programming is an art form but there's also a lot of junk written. It's nice when you see a quality product such as Lord's Tale, Dungeon Master and a lot of the Creative stuff – the quality and comes out of the screen at you. But you get so many games and you look them up then watch them all again and never go back to them," commented Tag.

"I can imagine people putting together something which could survive as an art form. But, after all, there are just games. People's imagination will have changed in two or three years' time and they will be forgotten.

"I used to play chess and sometimes you play serious matches but often times you play just to watch someone else. In that sense programming is an art form."



Oiginal motorcycle games are nearly as rare as a genuine taste of puppy flu but they can be addictive and fun. Microstyle's latest game is *RVP*, fairly in the mould of the motorcycle game but this time boasting a host of extras to add that elusive spark of competitive spirit.

The game is arranged as a competition against other motorcyclists and the tracks included are as near realistic as possible. Asen in Holland and Randy Hatch are just some of the riders but tracks which have been included. The objective is, as ever, to beat your opponents and although they tear off into oblivion at the start of the race, it's not impossible to come at least somewhere in the ratings which are produced at the end of each race.

Eight opponents are lined up at the top of the screen with a spot marker indicating your location in this merry bunch. This type of display keeps you on the edge of your chair throughout the game, especially when those vital two wheels start affecting your chances.

EFFECTS

With this type of racing game, it's the crash routines which you'll see most often. Short of a real spillage of blood and guts, these have been executed adequately. Your character leaps into the air after a crash and then tumbles into the grass. His next trick is to get along the road, pushing his bike before eventually climbing back on again. One fall from your bike and you stand a chance of winning the race.

The motorcycle graphics are fairly impressive but the roadside scenery is nothing to rave about. Unfortunately the trees look like

the green wallpaper nobody likes and the roadside signs are little better. Crashing into them also tends to be very much a hit and miss - sometimes they'll just send you flying but at other points you crash into them and shoot straight into the sky.

The sound is effective, with a kind of clonal chug to it but the increase through six gear changes is portrayed with perfect sound effects. It's here that the real impression of speed is given.

IT - Jerald (1990)

Large - Excellent



Pushing this thing along the road is tough. One fall from your bike and you stand little chance of winning - just like the real thing. These types of extras make *RVP* unusual and exciting.

RVP

MICROSTYLE



CONCLUSION

RVP is far from being original but it plays well. The tracks and turns in the road are varied enough to make sure that you're changing gears at the time which is a definite improvement on the likes of *Super Cycle* where you could race around the course in top gear. With lacking item Honda and based around an *RIP* Formula One bike it looks realistic and the game definitely benefits from this.

However, it lacks the graphical quality which makes *ST* and *Amiga* games to drink and after a while, even with a vast number of different tracks, it becomes tedious. However, if you're looking for a motorcycle game then the whole competitive atmosphere and the attention to factual accuracy makes this one of the best.

Mark Hughes



It's a typical race. Fortunately the flag goes down and you're off! Struggling at the start, when *RVP* begins you have to wait just two eight seconds - two lights and the bike obedient out of control, too low and you're nowhere. Reluctantly catches.

SCORE

0 1 2 3 4

ACCELERATION

1 2 3 4 5

ENGINE SPEED

0 1 2 3 4 5

LAPPING INTEREST

0 1 2 3 4 5

OVERALL 68%



WEIRD DREAMS



RAINBIRD



It's well word. Drifting off to sleep is one thing, but waking up in the middle of a confused landscape where all sorts of aerial and plant life sets out to attack you is altogether another. It's a bit like falling asleep just before the fourteenth came into power and re-awakening to mass unemployment.

LIM

The game tests your logic considering it's a hospital bed, drifting helplessly into the surreal world of your subconscious. In this world, anything is possible. The game is arranged as a set of puzzles, where the only objective is to stay alive long enough to wake up again.

The game is arranged around a ball of mirrors where doors lead off to each of five separate puzzles. Only three of these can be accessed at first, the others become available later when the first have been completed. Those available can be accessed in any order.

STRATEGY

The game opens with a visit to the candy machine. You must pick up some of the candy and then leap to meet the stick. The stick can be dodged as it spins around but if you miss it for too long then it becomes covered in candy and the only way out is to lose one of your five lives.

If you survive this then the next step is to confront the humble bee by depositing your ball of candy and trying to retrieve the one held by the bee. Orbs play an important role in the game. The objective of each room is to pick up the orb and then return back to the ball of mirrors. The game features five different rooms with an obstacle behind each. The first room deals with the candy floor

and humble bee, then there's the clown where you have to kill and catch flying fish and then the long-necked monster. The third room takes you into a garden where deadly roses threaten to bite your head off and an evil self-indulgent little girl starts a vicious game of ball with you. The fourth room takes you to a room where you must leap across the hairs of a spider and come to terms with a skeleton. It's the final level you're referred to the three where you confront more utility foes and finally find out why you had to enter the orbs.

EFFECTS

Visual effects in *Weird Dreams* are stunning. Not only has great attention been paid to the various game spaces but each the space between levels play them. The beautifully with a side bar to represent take of a group of marked doors will guide you to the you in two with a player. Game graphics are faultless, drawing from the trip across the game keys to the final will show the candy machine has been visited, animated to keep the story smooth and intriguing. Even the opens singer on the first puzzle.



5 Play like much of *Weird Dreams* and with and as little this level is much more than the ball of mirrors.



usually succeeds in looking like a proper singer.

His attention paid to the physics, games are often let down by a poor soundtrack. Even in the case of the addition of a few bits of sampled sound would have improved the whole, but at least the best effort. It's also a pity that the game's story is almost entirely absent.

B - Amiga, CDS

Amiga - Jemsoft



At this point in the game is where you return after each challenge. The muscular beast is then left a pathfinder in the relevant level.

Without doubt, *Bird Dreams* is an original and clearly interesting game. The graphics are faultless and movement is so smooth that the game just flows with confidence. However, a ridiculously long wait between levels and potentially short levels do very little to sustain interest over any long period of time. These levels can often be over in a matter of seconds, particularly when you approach the game for the first time. It's not just a minor niggle but a major frustration.

The problems in the different levels are enticing but they lack the kind of depth which would have made them more fulfilling. However, once you begin to murder the different challenges you can soon begin to anticipate any problems in the area, as the game suddenly becomes more addictive. It's doubtful whether the addiction level will ever rival that of a shoot'em up, but *Bird Dreams* is striking and unusual enough to see you delving into a world of living nightmares over and over again.

Mark Higham

CONCLUSION

Love has caused more war and grief than anything else in history (except maybe religion) and it has been the background for so many computer games in the north being threatened by alien invaders. So yet again we have the problem for that funky little Savage, whose mission has been abandoned and locked away in a dark and dingy coffin dungeon.

There are three games which lead separately and passwords are needed to access the two later levels. Levels two and three can be played without passwords, but you only have one life.

Level one is a run-and-shoot-along-everything-is-right game which sees you hunting down all those naughty little monsters who just can't wait to sink their fangs into you. Occasionally you come across a big, mean and nasty guardian, and these take a hell of a lot of killing. If you manage to fight your way to the end of the level you'll be given a reward for level two.

In the second level you wander across the valley of death and have to avoid the traps and ugly monsters. Yet again there are hordes of monsters out to get you, but fortunately they can be despatched with a blast of good old-fashioned magic.

After defeating several waves of bad guys you get the final password and arrive at another entrance to the castle, which is high above your head. Not being the sort of person that gives up easily you send your faithful, faithful friend, Eddie the Eagle (and of course, not man of steel!) with a lot of a flap (it's time to rescue your true love and beat up yet more of those bit of demons).

The music in *Savage* is reminiscent and the sound effects are little better. Graphically it's nothing special either, there's plenty of colour and animation is good, but there's nothing to make it leap out at you and make you say "Wow".

Savage unfortunately lacks that essential quality which makes an awesome game and you're left feeling that you've seen it in your hands which you'll play for a while, but will soon be of. Add up to the standards expected of Format.

Gary Barrett

WORLD 3.0
AMIGA 3.0
COMBAT 3.0
LASTING INTEREST 3.0
OVERALL 61%

B - Amiga, CDS

Amiga - Jemsoft

Savage

RAINBIRD





DEMON'S WINTER

SSI/US GOLD

You'll never complain about the English weather again. For rain at the end will be rain and with rain and the seasons will turn to blood, unless... can you guess? — a band of valiant adventurers can save the world from its terrible fate.

The demon god Malion (who's in a name, it lies) trapped in the heart of a volcano where even now to power is growing. Millions of Malion travel the world causing death and destruction as they work on the task of releasing their god.

Amiga - Macintosh (DOS)

87 - 23400000



Before you begin on your quest to save the world you need to create a party of adventurers. Up to five can begin the quest and you can choose any one of the seven: dwarf, elf, dark elf, troll or human, and 30 character classic: ranger, paladin, barbarian, monk, cleric, thief, wizard, sorcerer, visionary and scholar. After you've chosen the race and class of the character you can choose ten skills for it. Make sure that at least one character has the Spell Power skill, because they can be used to heal your characters. A priest is useful too as they can destroy undead using the power of their deity to strike them down, saving you from having to go in and fight them hand to body hand.

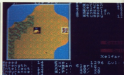
Now that you have your band of adventurers it's time to explore the world and seek the means to bind Malion to the volcano for all eternity. The world is filled with dangerous foes to fight and as you explore you'll gain experience which will enable you to improve in combat and magical skills. Eventually you'll be able to buy a ship and then explore the oceans and reach far off lands. Malion and his minions await your band, and they will stop at nothing to defeat you.

EFFECTS

The less said about the graphics, the better really, they're colorful alright, but what's poorly animated and lacking in detail. The world graphics are very simple, in fact the whole game looks extremely eight-bit and the sound is just as bad with ineffective effects and an absolutely dubious (and awful) signature tune on the title screen.



■ Monitor the movement of the thief and magic to and take your opponents.



■ Your party of heroes explore the world looking for equipment, adventures and really wild things. A long list of options sits to the right of the map with which you control the adventures.



■ An important part of the game is character creation, choosing the right features of mental and magical skills is important. Having the appropriate number of leveling points is very important, as you can level off level one of your characters has the right focus that is to regenerate.

The label of role playing game has been applied to many games in the past, and the majority are just hack and slash games with no thought involved at all. *Demon's Winter* was called a role playing game, but was just a hack-and-slash with pretty graphics. The *Barbaric Tale* is closer to role playing with more than just simple puzzles to solve, there was some plot and more challenging mental constraints to deal with. *Demon's Winter* takes a step forward along the role playing lines with the multitude of options available to you and the more realistic combat in which you have much more control. Tactics can be used properly for a change. Unfortunately so much has been done to make the game play well that the appearance has taken by the wayside, it looks and sounds awful which is a terrible shame, because *Demon's Winter* is one of the best computer role playing games to date. SSI are still at the head of the field when it comes computer role playing and they look likely to stay there.

Gary Barrett

CONCLUSION



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■ The eyes of infinity can be rounded by the 18 signs of the zodiac. However, in the zodiac to complete and harmonize the most difficult. Each sign is either a solid green, red or blue.



■ A star map of the constellation then appears after you've chosen one and the instructions to its corresponding puzzle. Choose a star and let the ball be reborn.

■ In Scorpio your task is simple, it's more of an introduction to the game than anything else. Simply turn out portals to the darkness which should prove to be no problem.



Binary Design are the people behind Wicked and control of Paul Harris and Rupert Bowater. They both took part in the game design, but Paul is the one who did the actual programming over a period of 18 months.

It was written using the Allegro development system which runs on a Mega ST. The code was then ported across to either the ST or Amiga. Graphics were designed using Paper Ditz (ST) and Proton Paint/Jengal.

Not wanting to be left out our competition birthday issue Actioncon are going away 30 Wicked 1 disks and two copies of the game. All you have to do to win is write down which sign of the zodiac begins on the June 21. Send your answers on the back of a postcard to WICKED COMPETITION at our usual address, not forgetting to say which machine you own.

COMPETITION

WICKED

ACTIVISION

Signs of the zodiac, tarot cards and computers may seem an odd combination, but all come together in Activision's latest game, Wicked. Good and evil are having their usual disagreement and want to annihilate each other.

AIM

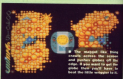
The sun and moon are two opposing forces and you're an avatar of the sun on a quest to defeat the evil minions of the moon. Defeat the moon and gain eternal glory, fat and lose your soul.

STRATEGY

The action takes place in the 12 zodiac constellations from Scorpio to Sagittarius. In each

constellation there are three stars in which the evil of the moon is trying to gain influence.

The evil is spreading in the form of a viral growth which slowly creeps all over the screen. At the centre of the growth is a portal from which the infection comes. Occasionally the portal produces a spore which it left alone for too long flies off around the screen creating a new portal. To stop the evil growth from spreading to cover the entire screen you have to cover all of the evil portals with good and annihilating growth. Good growth however can't



■ The magical life force spreads across the screen and grows faster off the edges. If you want to get the edge, you'll have to be at the edge of the screen.

GRAND MONSTER

RAINBOW ARTS

Getting your head kicked in takes on a whole new meaning if you happen to be a Relem, because all you are is a funny head.

You don't get your head kicked in, however, you do the kicking instead. The action takes place on a grassy pitch with you and your opponent standing at opposite ends of the playing field. In front of each of you is a row of queuing Relems waiting to be kicked. The idea of the game is simple, kick these Relems to the



■ Kick these Relems up the pitch and then use for the opponent to be able to win the match.

other end of the pitch and the opponent to the opposing line. Kick the line and you go into the next round of the game and if you're good enough you'll eventually reach the final. Your opponent's Relems are also kicking, but you're a Relem, and the Relem is kicking back. You represent to strange people (Relems) and should kick your way to victory.

In the first round of the competition you play through against seven other opponents in a knock-

CKED



another evil and so a puff must be blown to the evil portals and that's where you come in.

The blow around the screen destroys the evil growths with a blast of fiery energy and clearing a pathway for good growth to the portal. But evil portals also sprout spores which you must carry away and deposit on your own growth so that a new portal can be created.

Blows of the moon guard sail size and do their utmost to destroy you. Unfortunately you can only fight back during the day



During the night the evilness level of the moon is visible and its minions can't be harmed.

time which is indicated by a gold or red in the centre of the screen. During the night the hideous face of the moon is depicted instead.

Once during each day and night the set of moon splits smaller and a small sphere is released. At the same time a level card is shown which gives a clue to what the sphere does if you collect it. There are eight level cards: some beneficial and others hazardous, after a few games you'll know what each of the cards means and when to collect or avoid.

To win the game you must be victorious in the battle for the collection of Sagittarius, but you have to fight through at least three other constellations before you can get there. It's best to start

During the day you can fight back against your evil enemies under the watchful eye of your ally the sun.



with Scorpio to get you used to the control and level cards.

EFFECTS

Sound is one thing that I believe isn't short of, an ominous tune plays before each game and a happier one if you win the battle for a constellation. There's also a more dramatic tune when you lose. Sound effects are excellent with a great marching sound as the moon sails your way. The only criticism that can be levelled at the graphics is the size of the sprites, they're small and on a screen filled with growth they're very difficult to spot, fortunately you do get an audible warning when one appears which makes them a little easier to find.



Once each day and night the moon or sun parts and reveals a level card. It small spheres also appears which has the effect of the level card, for good or evil.

W-Joytek 2788

Single - Excellent

Wicked is a weird game, it combines strategy and arcade action with tactics and strategy to produce an incredibly addictive game, for a while. There are three styles of game that you can play: tactical base, standard mix and arcade base, which cater for most players, but in the long term you may well get bored of just shooting growth. Actually completing the game will take a long time because on later constellations there are hordes of evil portals and the computer plays much more intelligently. If you do eventually win you're unlikely to play again, but you might still find it up occasionally to listen to the music. Thoroughly enjoyable and with plenty of visual references - what more could you want from a game?

Gary Barrett

CONCLUSION

SLAM



The final round has some manoeuvres and games are played on a knockout basis.

ing appears during the game itself.

CONCLUSION

Grand Slam is an important area: testing, testing. Game play is very repetitive, just taking heads and playing one of the two intermediate stages. If there had been just a bit more

at contest, the winner of each match goes onto the next stage until you reach the round one final. After each match the Belmont can get their own back in a bonus round. Here you get fired off the beams for as long as possible. Win the final and you get to feed the lions.

Little thing makes taking things into the feeding mouth of the lion who at the end of the round. If you get enough, he goes on to the next stage where you must defeat everything

ly skilled opponents. The last thing you do to become GMS champion is beat the winners of three previous GMS tournaments.

Graphics in GMS are cute and fun with plenty of detailed opponents. The little Belmont is particularly look good, shining in anticipation of being kicked in the face.

Sound effects during the game consist entirely of hits and thuds and cheers from the crowd. There are some very good tunes, on the selection screen but with-

Amiga - Joytek 2788

IT - Average

SHOTS 4.0

ANIMATIONS 4.5

MANOEUVERING 5.0

LASTING INTEREST 4.5

OVERALL 54%

thought put into gameplay then this would have been an excellent game, but lack of variety just leaves you bored after a few games. In fact you'll get more long term satisfaction from putting the five girls, supplied with the game.

Gary Barrett

When finances are tight there's only one option - knock up a couple of mega-bucks games and sell 'em for £24.99. MARK HIGHAM fancies himself as a whizz-kid.

SELL SELL SELL



The are enthusiastic young person, a computer studies course and a new computer and what do you have? An instant programmer. And what do programmers do? Get lots and lots of money of course. From all the adverts which like computer stages ones begging for programmers, it would be far to assume that they're really in demand. Many of the adverts promise riches of thousands of pounds as well as a possible chunk from royalties on the game.

So, you want to get rich quick. How do you go about marketing a game?

THE IDEA WORKS?

Probably the least painful way to test the water is to work on an original idea and develop it, then take it to a software house and see what they say. It's usually best to send off the idea first and wait for a response from the company. The flagmen worked this way when they developed *Bloodwych* but it's really only a method used by already established programmers who intend to write the code for the game.

Most companies, particularly Activision and Microsoft, are on the lookout for any original concept. Even if you are not prepared to or capable of writing the final program, the idea may still have potential.

If you really want to approach a software house in this way then it's certainly advisable to take along samples of your work since the company has nothing to prove to them that you're actually capable of writing the software. If they like the idea and think you're able to write the program then a few post-remits later and you'll be well on your way towards signing the contract.

Samples of your work are often an important aspect to finding a sale in the games industry. Even samples of good graphic design can prove useful. Entertainment International, being a fairly new software house, is always on the lookout for graphic artists and good classroom demos are often enough to attract your name notice.

THEN THERE'S WRITING IT

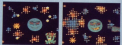
If however, you prefer the more hands-on approach than you can always come up with the idea and start to code it yourself. Remember though that programs can often take a ridiculously long time to code, especially on the Atari 1024, so it's not a good idea to give up work and start.

This is no way to do a conversion since licences are often assigned by software houses many months before the conversion is announced. If you really want to pursue this idea then the best company to approach has to be US Gold. Samples of your work are imperative and they can usually spot a potential game.

However there's always a market for



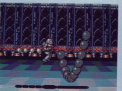
■ Examining the market and history of a company can assure that you get just the right exposure for a game. Being a fantasy game, *Bloodwych* was taken to Microsoft because it was felt that they knew more about this market than anyone else.



■ Activision's second *Wayland* game, referenced in this issue, was written by a programming team which took the final product to distributors in the hope that it would be marketed. This just goes to demonstrate the high quality required by the leading software houses.



■ *Manhattan Thruway* was written by Omega Software, a team of just two people. This was advertised in magazines and was packaged as well as possible but in the end it sold 1000 more than ten copies. Probe Software did however, also receive letters, leading it to a possible contender for their own *Autumn* conversion. In the end it failed.



■ Microsoft usually like to see a game and if they are potential to it then they'll make a small initial payment. The other money is paid until the program has been completed and play tested.

DO IT YOURSELF

There is, of course, an entirely different way to go about selling your game. The very brave can attempt to market the game themselves. The experts in this field can often prove astounded that if the game's a good idea then a few ads in magazines will soon bring the reviewers and distributors flooding. Even programming houses have spotted potential in a game advertised and sold directly from the programmer (Rapha: Software were given the Othello project they found that a small programming team were already struggling to sell copies of a game called *Memories of Caesar*). It was a two game based around the popular solitaire and so Rapha Software looked at the ceiling and the kind of royalties paid to see if they could be adapted for sale in their own Othello project. For a while Rapha franchised statements like "royalties start at 10% before it was eventually decided that the game wasn't good enough. This is by no means uncommon.

GET PACKING

While the coding is still taking place you must start to think about the artwork which will be used on disc labels and packaging. A helpful friend with Othello art can be recruited to create labels, printed with promises of a percentage of the profits. People prepared to contribute sound effects and graphics are always useful, again brought along with promises of great wealth.

A simple plan of artwork to make up the cover is the last approach. Recruit your self to one or two colours like red and black otherwise you

can step into expensive territory. Alternatively you can use as many colours as you like and take the result to a professional colour photographer and get the perfect result. This method can be extremely expensive and is only advisable for the first few weeks of sale. This is the ideal time and so it's best to spend as little money as possible until you're secured at retail. But disk purchases of 10 or 15 disks can reduce the cost here and disk cassettes with your own disk drive at least in the short term.

AD HOC

One of the most costly expenses in the advertising bill. A half page of space can cost anything up to £30 for just a line and while ad and advertising salesmen will always try to sell you more than you wanted, it's advisable to send copies of your game off to as many magazines as possible for review and hope that it receives some praise. Even with a good review, it's surprising just how few sales appear. You could certainly find yourself stuck very well if you manage to cover your costs in this way. However, it's certainly a good method of getting noticed. Paper distributors and software houses will often respond to a potentially good idea.

It is an illusion that the software industry is bursting with money. Unless you come up with an original game such as *Populous* or *Archon* you'll find your difficulty in securing into the megabucks league. However, if you're up with a good product then you will find a market for it.



It doesn't have adopted the strongest approach of any software company. They will look at nothing at all, but games sent to them are returned unopened. This might seem like a ridiculous approach but they once rejected a game and then returned one which was cheap enough. The programmer of the first game threatened to take them to court.

LEGEND



Actual Screenshots

Legend is one of disk's newest releases. It was written by Marianne Software, a team of four people who went through all the problems of marketing the game and themselves and then went to CBS, who eventually took over the distribution.

be found out there for original games which have been done carefully enough. Even if the final product is not up to the kind of standard required by today's market, a good idea can often undergo serious revision if the software house sees a market out there. Most will look at a good idea and if the graphics seem to be suffering or the sound effects are not worth much their suggestions can



Entertainment International have been responsible for marketing several games million sold off houses. *Blade Stormtrooper* and *Pipeline* were written by programmers unknown to it.

be made or other teams introduced into the project.

More one of the biggest obstacles appears is in conversion. ST and Amiga games are almost always backed up by the equivalent on their scoring partner, even if the game is only a direct port so you must be proficient in the other side. Eight-bit versions are also often required, particularly if you are dealing with the larger houses such as Ocean, US Gold, Microsoft or Activision where all formats usually appear at some time. This does not mean that you have to be able to program every computer out there because other programmers will be introduced to cover the versions which you cannot do yourself.

A letter is often a sufficient approach to a software house. It's all very well brainstorming a strategy in some attempt to see the managing director but at the end of the day you'll always be sent away until the software house has passed your game over to a team

of programmers for evaluation.

If a game is not accepted it does not necessarily mean that it was a poor game. Often software houses need to know more about the market before they'll consider backing it. Even if a software house is prepared to take on your game it's best to do some background research in order to make sure that the game will be marketed to your target. Electronic Arts and Microsoft have both had considerable success in its adventures market so they are the one to go for if you have something a little odd. They know the market well and have enough experience to make sure that your game can be targeted at precisely the right people. Similarly, if you are experts in co-op conversion and Activision are always on looking to try their original ideas.

When a software house decides that they want to use your game then they will ask you to a meeting and discuss the kinds of changes they would like to see implemented. You tell them whether it's feasible or not and then you sort the contract. An initial deposit is made if the idea is a good one and the software house is eager to use it. Then they will wait for progress before making the payments.

Microsoft are not alone in making a small initial payment and then paying more financial aid until the game is completed. This might sound like a clever way of operating but many programmers have come across a problem in their code and given up altogether, shooting off to the other end of the country and leaving the software house with a useless product.

Virtually all software houses will at least look at your game. However, no games are good enough. Entertainment International receive around the games a week, all of which are returned. Products which have appeared this way are *Stormtrooper* and *Pipeline*.

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GAME BUSTERS

When you're all alone and you're feeling low; when the nights are long and the terror is real; where ya gonna go? Gamebusters! Go ahead, make your day.

The concluding part to this epic arcade adventure.

Level 8 - Kill the two pairs of creatures with the overheat bow (in wall level secret). Jump over the caterpillar-like creatures when the lead is as far down as possible. Walk past the potion to get the lead. Walk backwards and the lead will spit the creature. Once the lead has finished eating, walk forward and the water starts to rise. When the water is just below the lead's mouth you should begin to jump. Continue jumping until the water is below its mouth. The wall will disappear allowing you to walk forward again. Hit the left of the box with your hand to prevent them from disappearing. You can increase your hit strength by hitting the grey creatures on top of the wall. When the wall disappears walk forward to finish the level.

SWORD OF SODAN

Level 10 - Use a magic sapper as soon as you appear on this level. Activate a power shield and immediately jump towards the man. Hit him once to kill him then jump to the right to finish the level (you will be shown on the stairs). Don't waste any time because you will need the power shield for the next level.

Level 11 - Jump towards the mouse creature and continue to hit it until it disappears. The power shield should last long enough. Don't panic when you see the sword because you can actually jump over the energy that he fires.

You will have to repeat this for a long time - especially if

your remaining hit strength is low.

You should have two magic sappers and a power shield with which to finish off Jozak. When Jozak gives crazy you can tell, he fires loads of blue energy bolts at you, activate the power shield and both magic sappers. Walk towards him and continue to hit him - he should only need two or three hits before he dies.

All you have to do now is walk to the right and you can see the end sequence.

Try pressing C, P or HELP during a game to see some hidden messages. Also try putting disk three in at the Workbench prompt to see some details about the program.

Daniel Wynn
Doncaster,
South Yorkshire

HOLLYWOOD HIJINKS ST & AMIGA

To open the first door, turn backside wall, then run, then north. To open the safe in the house turn the dial right three, left seven and right four. Confused by the maze? Put the this paper on top of the yellow paper. Put the cardinal in the cannon and light the fuse. Open the compartment and take the mask.

Samir Gamar
Redditch, Worce

OPERATION WOLF AMIGA

Level 1 - Communications
Fling with only 50 troops, four choppers and five tanks. Break out large groups of troops, tanks and choppers with single grenades. Try to shoot the troops with black levels but as these three levels which save deplete your energy level.

Level 2 - Jungle
A little harder this level with 60 troops, eight tanks and eight tanks - however, with no body throws. At the end of this level the general appears with a girl hostage. Make sure you have at least one full magazine of ammo. Be careful not to hit the girl. Good timing is essential and remember the general has a machine. You can kill him with about 15 good shots.

Level 3 - Village
Easy this level with only 40 troops, four choppers and three tanks. The only real dangers are the troops with the hand grenades. Take your time and only use gas fire. Try and save your grenades for the next level. Don't worry if you lose a lot of energy because most of your energy is replenished level. Pick up as much ammo as possible.

Level 4 - Powder Magazine
This one's got 40 troops, seven choppers and five tanks. Don't hang around on this level. This is where the saved grenades come in useful. Try and clear it as quickly as possible. Watch out for troops with large machine guns as they wear bullet proof vests, only a well placed head shot will work 'em. Also on this level are stream headed hawk-like troops - shoot these skin heads as soon as they appear. Don't worry about running out of ammo on this level as your ammo is replenished at the end of the stage.

Level 5 - Concentration Camp
Real tough this level with 50





troops, 12 choicors, knife throwers, grenade throwers and troops with bazookas. And on top of that there are five hostages to rescue. If you don't save all five you will not complete the game. Make sure you don't kill any or let the enemy get near them. Pick up as many grenades and magazines as possible, or shoot tanks and sign when the person is empty, as you will need as much ammo as possible for the next level.

Level 6 - Airport

With 85 troops, 11 choppers and four tanks you're in for fun. Fly and take out as much of the enemy as possible with gun fire. You'll also need to pick up as much ammo as is available for the first chopper. Wait until the chopper fires its grenades and then fire your grenades at the same time.

Bonus Screen

In between some of the levels there are bonus screens. Always fire grenades at the missile choppers and you will have no problems.

Andrew McCarrig

Maxborough, South Yorkshire

HYBRIS

Amiga

Load the game and wait for the high-scores table to appear. Type COMMAND and press the fire button to play the game. Press F10 during the game; your ship should glow. This means your ship is invulnerable and you've got unlimited energy and smart bombs. Press F2 to F5 to get the five different editions. F5 advances a level.

Andrew Phang

Australia

PACLAND

Amiga

Level 1 - jump on the first hydrant to reveal a bonus. On the third fire hydrant, go to the right then walk against it. Four Pacmen will now be wearing a blue cap which means the little ghosts dropped from the planes. Can now be turned into 200 points as every bit.

Jump over a car coming from the right, wait until it turns around, jump on top of it as it moves to the left and you will find no more ghosts appear on the screen.

To pick up a new bonus at the end of the level, jump when the 1 of TIME appears.

Level 2 - jump on top of each car to get the ghosts. Finish off in the same manner as level 1 to pick up a new bonus.

Level 3 - keep your finger on the jump button to reach the end of the level early. Run fast at the springboard and jump when you see the springs pressed. Tap the joystick to the right to get over the pool.

Level 4 - get off back and watch the computer take over.

ENLIGHTENMENT

Amiga

When you have reached a new or unexplored plane, take out the disk and kill the devil. Instead of returning to the village of Ishanah, you will be returned to the plane that you died on. Insert the disk and start playing again. This tip can be repeated as many times as you want.

There is one problem in doing this however: you lose all the spells that you had before and start the game again with the normal complement of spells: gales, flood, dry etc. You might not last long on some of the later levels, but at least you can do some exploring for when you try and complete the game the hard way.

Paulan Mills

London



DOUBLE DRAGON

ST

Start a two player game and hold the fire button and down key on both controllers. Press ESC and the credits go by. You now have infinite credits. Go on punk, rescue that girl.

Chris Harding

Amersham



FOOT

ST

Advancement in rank has nothing to do with the amount of credits to your name. Instead it is related to the amount of choicors you complete and ships destroyed. The only way to earn credits is to

haggle on the trade-net you get credits for missions, but it would take a long while to amass a fortune. By staying in the space station on the net and trading in guns, food, gold, you will quickly build your fortune.

Scavling to space stations requires you to jump until you cannot get any further.

To complete missions:

1. Take message: get go there! Use if you.
2. Destroy alien, but not

- alien: kill it. Use if you.
3. Destroy last.
4. Escort enemy the if you.
5. Investigate disappearance of if you.
6. Search for survivors.
7. Escort WIP. Land on planet the go to destination.
8. Go and report.
9. Destroy alien.
10. Rescue children. Land on planet.

M Collins

Bedford

DOUBLE YOUR MONEY

From next month onwards things get complicated because instead of one magazine there are two: ST Format and Amiga Format. So get these tips and games written and in the post to ST Format/Amiga Format, 4 Queen Street, Bath, Avon BA1 1EL. Make sure you send the relevant tip to the correct magazine.

This month's winners are:

Kevin Ponder, who wins several Amiga goodies, for his excellent Adventure tips.

M. Collins provided the Restoration of First Predator tips, so some ST content for him.

Their prizes are on the way courtesy of the STPS.



Level 5 and 6 - there are maps with the South as you go back over the previous two levels. At the end of 6, jump on the last ship to get a bonus. At the end of 5, jump when you see the whole of your wife in the picture.

Level 7 - watch out for the double deuter bonus, but if you do the same car trick as in

level 1 you'll have a clear ride. Jump at the end when 5 appears.

Level 8 - this is all swimming pools, but maybe like mad and happy!

Kevin Ponder

Widnes

North Yorkshire



PREVIEWS



■ **Islands** is a medieval world adventure which lets you explore labyrinthine and distant worlds in a land for someone who enjoys medieval fantasy. The adventures begin here created by Peter Lynn with Mark Gorman responsible for programming. **Islands** is scheduled for release on the PC in the next few weeks so make sure you catch the review in the first issue of **ST Forum**.



■ **Islands** does indeed have a medieval theme, but it's not a medieval adventure. It's a medieval-themed adventure. The game is set in a world where you explore a vast, open world in a medieval setting. The game is set in a world where you explore a vast, open world in a medieval setting. The game is set in a world where you explore a vast, open world in a medieval setting.



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SCREAMS FROM SCREEN 7

This month sees the appearance of several new titles, **Islands** 1, 2 & 3 of new products are lined up for the summer months, the first of which is intended to be a



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and said it is no way ahead to agree until the whole thing. If there's anyone out there who purchased a 586/133 chip and chooped it is half there tough.

WE ARE TRAINING HALLOO

This tip was sent in by M. Langley of Niles/ Science for those of you who have ever wanted your dialog boxes to be transparent or transparent or for the buttons to be superimposed directly onto the main program display.

The process uses WINOS but should be able to be converted to any other OS.

1. Select Frame from the box menu.
2. Highlight the root tree object.
3. Select Colors from the Plug menu.
4. Set the R, G, B, width, height attributes to 0,0,0,0,400 (or 200 in color).
5. Select the BOX radio button.
6. Click on OK.
7. Select size from the border menu.
8. Enter a value of 0 in the dialog box.

9. Add objects where you feel like - the root object's presence can be ignored.
Don't be and change the size and dimensions (step 4) by dragging some a bug in WINOS will cause negative values of R and G which will result in problems when you edit your resource file at a later date.

WELL, I'LL BE SCANNED

For people who own a hard disk and make constant requirements on GPOSS, it's not uncommon to move GPOSS into the AUTO folder on a hard disk. This is fine for most things but the (last) Handycam software will clash with GPOSS and cause infinite problems, asking Mr. F. Thompson from North Brisbane. Daniel do intend to resolve the problem soon.

REALLY HARD PROBLEMS

Marjo deVries from Sheffield has written to Formed with more information on auto-loading hard drives, the crashing of programs, in AUTO folders and Desktop Accessories. He has been using an Atari 5004 20MB hard drive

and was developing a desktop accessory which was accidentally saved onto hard disk and not erased. When the machine was installed again, the accessory was auto-loaded from the hard drive which instantly caused the AT to crash.

The way around this, according to those in the know at Atari, is to power up the monitor, external drives and hard drive as normal and then power up the computer. Its just as the light on the internal floppy disk has flashed, power down and hold the alternate key.



Almost all hard drive auto-loading software is designed to crash loading if this key is depressed. The desktop will appear as normal but without any room for the hard drive. If this refuses to work then keep trying - it will function properly in the end. Using the utilities supplied with the hard drive, it should then be possible to edit out the offending files and then re-install the auto-load device.

CALIBRE

Needmore is a curious program, totally without documentation, to it's not uncommon to find curious little hidden secrets. Around Atari from Manchester has found an animation feature masked behind the Galileo icon.

It can be accessed by pressing down on the right mouse button when the pointer is over the 'I' in Galileo. You may need to try this several times before it works, correctly but once you've managed it the new icon will appear on the panel. It looks like an old camera and gives you something new to play with.

CREATING PRINTER DRIVERS

The manual supplied with the Atari is efficient enough in explaining the operation of the software, but when it comes to the section on installing your own printer drivers, it becomes complicated in its explanation of some very basic points.

If you try some of the print or drivers supplied with the Atari, it's likely that you'll obtain some form of printout eventually, but unless your printer matches one of those drivers exactly then some of the Atari's own options may not show up on the finished document, i.e. bold, italic, etc.

1) Open the PPRINT100 printer folder.

2) Select L2 80-PRX from the PPRINT100 folder and drag it to your main directory window. Click on OK at the prompt, then when the copy has finished you will have two L2 80-PRX files, one in each window.

Note: I only picked the L2 80 file as most options are used on it. Comprehensive instructions should use the Source file.

3) Click on the L2 80-PRX file in the main directory window and then on the file menu at the top of screen. Select Show Info and change the PRX extension to a .J200 extension. You have now created a file that can be loaded into the Atari.

4) Load the Word and then select L2 80-2000, this will be loaded in and you will be presented with the configuration table for a fairly standard dot matrix printer.

Scroll down the document a short way, and click on the heading 'Printer characteristics'. Just above this you will find six columns, leave these alone for now.

5) Press Only the line and last boxes apply in dot matrix.

6) If you need a display window, refer to your manual.

7) This will now require your printer manual to find out what internal codes the printer and a list of commands. Use Format and the cursor keys to input your own codes. Confirm down the list allowing the lines one by one until you reach the heading 'Initialization Table. When you look, you will not need to enter any of the entries listed here at the moment.

8) When you come to the good part then the last step is to click on OK. I pointed here the editor quite informative manual. Before saving your hard work, go to the menu marked Edit and click on 'W' (Word) to turn it off. Then go to File and select Save as. Rename your work to suit your printer, you have and you're a .J200 extension. Click on OK to any prompts that appear. When saved, go to File and select Done.

9) Click on your .J200 file and drag it to the PPRINT100 folder. When copied, your new .J200 file will be ready to be installed. Click on OK.

10) Now that PPRINT100, this will find a directory of all available files. Select the one you have just created and click on OK.

11) When finished, drag the PPRINT100 file over to the main directory window, and release. Click on OK to any prompts.

12) You should now be ready to try out your new driver. Note: If you have created a data area to hold your .J200 files on, you must copy your new file PPRINT100 over to it.

13) If you have a good idea to type out a test document using the Atari and installing all the different test styles available.

Obtain a printer and connect it to see if any styles or commands work as well as they should be.

14) If it is not what you're looking for, then try to try out again.



WIN LOADSA DOSH

If you're having trouble with your AT or if you have any hints or tips which other AT owners will find useful then send them to: Alan H. Davies, 67 Riverside, 6 Queen Street, Bath, BA1 1LL. Each month we give away £50 for our favourite tip so if you're looking for some extra dosh, get writing.

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WORKBENCH

[illegible]

When programming machine code on my Commodore 64, all I had was an area of RAM and a set of graphic registers which controlled the screen, sprites and the cursor. This was the base level of the machine – if I wanted anything to happen it was up to me to program it.

Things aren't that simple on the Araga. There is such a wealth of talent to choose from, I'm not sure where to start. I simply cannot find the musician's happy land, for particularly interested in the graphics library and I am therefore considering leaving the Araga

If you're got an Amiga and you're got a problem then you're in the right place. This month JASON HOLBORN answers more of your queries and puts the final touches to his AmigaDOS tutorial.

Hardware Reference Manual and
Master Image System
Programmers Guide - you won't
need it!



■ **Morley** says from the Commission: "It seems that a frightening aspect comes from the fact that we

IBM System Manual. What I want to know is will the book describe the way the computer loads screen info, uses the cursor, etc? I am particularly interested in using pseudo color games.

Tuesday, February 27

The Amiga system's software interface, multi-tasking, EasyWin is only an interface between the programmer and the Amiga hardware. If you ignore the operating system and program the hardware directly, Amiga programming is in fact very similar to programming on a machine such as the 6801. As the Amiga custom chips are well-understood and can therefore be directly programmed using direct addressing.

You'll find that nearly all games programmers program the Amiga from the base-level "programming the Amiga hardware" they found interesting, but, surprisingly, it is a lot easier than working with the system's software. It can be a real joy to work with. Instead of buying the *SCSI Normal Manual*, treat yourself to the *Amiga*

1. **Identify the main topic of the passage.**

I have had an Amiga 500 for ten months now and I am generally pleased with the computer. However, there have been a few things causing me distress:

1. Please could you repeat the purpose of, and the difference between, the following library associated the extensions, „lib64“ „bin64“ and „lib32“?

2. Why are the files `intuition.library` and `graphics.library` (the same just had missing from the CDD) directory on my Workbench 1.2 disk?

2. Finally, while using the *Scopus* database, I have come across a lot of

could not get the following line to work:

© 2000 Blackwell Science Ltd

The assembler produces error code 8005, which the doc states is: "Invalid instruction shown."

James C. ...

1. The three different file types can be split into two different groups: the first two (.BIB and .img) are binary definition files that find *Anguillula* where the outliers are located in a library. They do this by using what are known as 'library offsets'. The library file is the actual library itself. These library files are not just for *Anguillula*, but can be used with any *Anguillula*.

2. There are, once again, two different types of theory: those that are **acknowledged** and those that are **denied**. The **acknowledged** theories are held in the **acknowledged ROM** while the **denied** theories are held in the **denied ROM**, directory of your host site.

Stack-based libraries are automatically pulled into memory when the library is opened and can then be 'flushed' from memory when the library is closed. Both libraries that you mention are actually held in ROM which explains their persistence from one state.

5. The INCLUDE file is trying to read the approximate equivalent of AmigaBASIC's Image files. These .img files are only available on the full version of Dope! which can still be bought for the amazing price of \$25 from our mail order department on 848 PACIFIC.

11. *Journal of the American Medical Association*, 2000; 283: 2689-2696.

Have you ever wanted to create one of those mind-bending, startle-effects that seem to pop up in computer games quite a bit these days?

Well, with Deluxe Paint you can. The first thing you must do is define a range of eight colours - all black except for one or two that must be white. Next, define a cyclic range to those eight colours, and the cyclic speed to maximum and then plot that cyclic to generate the 16b bar.

Finally, select **CPUID** from the mode menu, turn on **System**, and click on the dotted line to draw gadget to start. Now draw your twirly pattern, starting from the centre of the screen and moving slowly outwards.

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Journal of Internal Medicine 247: 105–112

[illegible]

Anyone who has owned an engine for more than a couple of months will know that the first thing to go wrong is usually the mount. The most common problem with the mount is malfunctioning mount bushes. This problem can be temporarily fixed using the following tips.

First, open up your mouse; be careful not to lose the screws and carefully remove the sticky tape holding the two mouse buttons and switches.

Group the procedure parts and, within the set, correctly organized, usually the closing page. Put the source back together again.

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ARGASM

JASON HOLBORN previews the latest Amiga assembler that promises to leave the competition standing.

Which machine do you think the vast majority of games software for the ST and Amiga are written on? Although the answer seems obvious, surprisingly it isn't an ST or an Amiga, but it is in fact the PC-based DOS system.

The reason why nine out of 10 programmers prefer DOS is because of its mind-blowingly fast assembly speed—compared to the operating speed of a DOS system to an ST or Amiga assembler is like racing a Porsche 900 against a Fiat Ritmo.

One of the few software houses to use the Amiga for all their software development is Joe Scott's Argonaut Software, authors of the highly acclaimed *Starblaster 2*. All Argonaut's Amiga and ST games were written using Holborn's *Despac* assembler, but even *Despac*'s relatively fast assembly speed was started to get to Joe and so Argon was born.

BLASTED TEXT!

Argon was originally designed as an in-house tool for the use of Argonaut's 11-strong team of programmers. The main requirement of Argon in those early days was to increase assembly speed to at least twice that of *Despac* while still retaining 100 per cent compatibility with



■ The Argon assembler in action. Fast assembly time and a focus on source code are displayed as well as a cross reference of all labels used.

Holborn's system—when Argon was started coding speed increases of over 1000 per cent everyone was amazed. Argon consists of two distinct parts—the Argon text editor and the assembler. The text editor looks similar to Holborn's editor but has major differences. Firstly, the Argon editor is a multiple window affair that allows as many different source files to be edited in separate windows as memory will allow.



■ Argon's editor allows simultaneous editing and assembling of as many source files as you can load into memory.

Speed doesn't just increase in the assembler as Argon's text editor is one of the fastest around. This increase in text display speed is achieved by not using the Amiga's console device, but instead using Argon's custom routines to literally blast text onto the screen using the Amiga's blitter.

TUM TUM, GIMME SOURCE!

The Argon assembler is a powerful beast and can be used from both the text editor and, for the purists among you, the CLI. Argon's parser is special—optimised to achieve maximum assembly speeds, typically seven times that of *Despac*. Argon also offers many extra features such as label cross referencing and the ability to view the cycle times of each instruction—a very useful feature when trying to optimise your code. Argon does not include a monitor/debugger (such as *Ultimix* *Ultimix*!) and so if you do need one, this will have to be bought separately. The decision to leave out the monitor was based mainly around the fact that most games software will take over the machine and therefore render any monitor program useless. If you do require a monitor/debugger, they can be bought separately (check out *Ultimix*—one of the best around).

AVAILABILITY

Joe intends demonstrating Argon at the next Amiga Developers' Conference in San Francisco, and it should be com-

mercially available some time in late July. Final pricing and marketing details are still to be final but Argon will hope to market the product for around £100 at about the same price as *Despac* 2.1800.

When Argon is released, it will herald the arrival of the first truly professional quality assembler system for the Amiga. At last, the average user will have access to a development system that offers similar performance to a DOS system at an unbelievable price. If you're an Amiga assembler programmer, then you just cannot afford to ignore Argon.

BENCHMARK CORNER

Don't get convinced about Argon's speed? If it's hard facts and figures that you're after then just take a look at the table below. These benchmark tests were carried out on a standard Amiga 2000 with 1 Mb of memory and a 28680 processor, except for the DOS tests which were done on an IBM PC AT.

Branch mark	Despac 2	DOS	Argon	% less over Despac	% less over DOS
1	54,000	55,000	150,000	750	200
2	46,000	170,000	110,000	750	350
3	54,000	95,000	155,000	180	200
4	130,000	200,000	2,100,000	2,100	1,000
5	5,000	13,000	40,000	700	200

Benchmark 1 = 2000 lines of MOVES at 100.00

Benchmark 2 = 1000 lines of RTS

Benchmark 3 = 2000 lines of MOVES at 100.00 (100.00 1.0)

Benchmark 4 = Conditional Assembly (see page 100 for details)

Benchmark 5 = Branch handling (Branch containing 10 RTS lines, called 1000 times)

■ Joe Scott takes time out to contemplate life, the universe and everything.

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Abstract

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From Logotron RRP £24.95 **OUR PRICE £17.95** (A saving of £7.00! ST 0347)



In Archipelagos you are floating, as if in a hot air balloon, above a group of islands known as an Archipelago - green fertile surroundings by sandy yellow beaches, in a deep blue sea. Scattered around the Archipelago are stones, and somewhere there is one special stone - the Obelisk. Embodied in the Obelisk, is the power that cleansed the islands of tumours in Ancient Times. And the blood of the ancient peoples still comes to stain the land surface. To remove the power you must destroy the Obelisk. And the only way to do this is to join every stone to the Obelisk by a continuous landmass, even by building new bridges from island to island. If that is what is required, then ability to create the landmasses that will connect the stones is determined by the collection of special seeds, which can grow quickly. For as the sky grows darker, the eggs begin to hatch and with a mighty clap of thunder the poisoned blood of the ancients will sprout like fire. Some eggs will swell out away of the island land. You must work fast. Order Code ST0335



Flair Paint

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From Database AMI

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The ultimate way to create graphics and illustrations on the ST, whether on-line or in conjunction with a GEM package. Flair Paint has taken the market by storm. Real-time graphics functions and ultra fast operational speeds are achieved through 100 per cent machine code software with Miller enhancements if fitted. Features include: "Demo, 15 trial individual point magnification for the editing. Repetitive cut-out screen for adding individual areas then paste back in. "Bevels shape and line drawing including Bezier curves, Arcs and Polygons. " Flood and Boundary fill. " Drawing around canvas area. " Viewport - allows you to work on a canvas bigger than your screen.

More than two years in the making, SEM-based Flair paint is not to rest a moment. Hence your chance to become part of it. Order Code ST0440



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Telebrawl is the best game I have ever seen on the ST - ST Amiga Format

Exodus - Armed with a backpack brimming with grenades and a hotelerator. Order, our hero sets out on his quest. His aim: gratuitous violence.

Reckless World - Guide your ship through asteroids, demon dragons, gothic heads and mines in search of diamonds. Possibly the strongest release in terms of blastability!

Zynaps - One of the best shooters to date. Be stunned by the quality graphics while flying space-ships and accumulating weapons.

ST version order code ST0803 Amiga version order code ST0804



Navigator from Konix

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This superb joystick came from one of the largest and most reliable manufacturers, Konix. With ergonomic design it ensures a perfect fit for every hand, and maximum efficiency. The fire button is positioned directly beneath your trigger finger for super-fast reactions, and precision control, it lets you feel your every move and sustain maximum playability.

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FORUM



Forgotten Worlds from U.S. Gold

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Emperor Bos, the God of Destruction along with a further eight evil gods intends to destroy all known civilisation.

These gods or "Dust Runes" have now become known as "Forgotten Worlds". Now ten superior warriors intend to fight back and retrieve the world from the evil Bos.

Make your way through four levels guarded by three demi-gods each with their own deadly form of attack and defence.

Buy weapons at shops, using your tokens accumulated along the way.

Struggle through all these stages to meet your final battle, the war against Bos himself!

Order Code: ST180

A Special Compilation for Amiga Owners.

Lombard RAC Rally and Pioneer Plague from Mandarin Software.

The RRP for each product is £24.95.

But we are offering the two for only £29.99 (a saving of £20!).



Lombard/RAC Rally

Rallying is rather different from normal racing, and Lombard RAC Rally features a variety of independent weather, from fog to night driving, together with three stage types, including an impressive mountain track. The object of the rally's 15 stages

is to win enough to pay for repairs and keep your car in prime condition. Beating lap-times reaps rewards but wealth can be further increased by entering a quiz game. If you want to risk, you must first complete all 15 stages against the clock. You can then complete them all again, but in competition.



them so that they're ready to be colonised. Sounds like a great idea? It might have been. A genetic defect in life TV meant that it no longer creates environmental variety — which is a pity of explaining the fact that all the game's planet surfaces look identical — turning everything into a large slab. With the Mk II now out of control, it just makes all planets life without needing to see if it's inhabited.

It's up to you to prevent the spread of the Probes. The Lijestar will take you around the Universe but the ship is your attack vehicle. By selecting a planet with Pioneer Probes in the vicinity, the Lijestar will whisk you away to a sub-Earthlike space zone. The quicker you cruise through these fewer probes you'll need to total when you get to your colonised planet.

Once a planet has been claimed it's back to the map to select somewhere else. When all planets have been cleared it's over — and better luck next time!

Amiga (2447)
Order Code: 844715



Pioneer Plague

The Pioneer Probe Mk II was created to solve Earth's over-population problems. It runs around finding uninhabited planets and terra-forming

HISOFT DEVPAC 1

Unleash the power in your machine – teach yourself the fastest programming language there is with **ST Amiga Format** and **HiSoft!**

If you're at all interested in programming your ST or Amiga, you may have read a lot about the different languages you can get: BASIC, C, Pascal... they're all got their fans, but for sheer speed there's only one chosen programming device in 68000 superchip language.

Starting last month, ST Amiga Format started a six-part tutorial series to show you how to program in Assembly. And the system we've picked to teach you with is HiSoft's **Devpac 1** – widely recognised as one of the best assemblers you can learn on.

There was a cut-down version on the cover disk for you to get the feel of, but once you decide to get serious we know you'll want to get hold of the full version.

HERE'S WHAT YOU GET

■ HISOFT 'GEHAM'

Full screen mouse-driven integrated editor and assembler for preparing your programs. Once you've typed the code in, a simple click of a menu assembles your program to a machine code disk file.

For the convenience, your assembler program can include macros, conditional assembly and any ST or Amiga operating system call.

■ HISOFT 'MORHAM'

Monitoring program to help you debug your programs when they go wrong, inspect and change any memory locations, watch your pro-

gram running and spot errors as they happen.

Once you're happy with a program, it can be run as a simple stand-alone clickable file, just like any commercial program you buy.

■ EXTRA DISK

With a full version of **Devpac 1**, all the library files you need to write any ST or Amiga program, and example files to get you going.

■ COMPREHENSIVE MANUAL

150 page ring-bound documentation with full details of using **Devpac 1**.

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FORMAT LETTERS

*Need some practice on your wordprocessor? Write to us with your wingers and worries and be immortalised in print. Send your ST-style epistles to **STUART ANDERTON**, ST Format, 4 Queen Street, Bath BA1 1EJ. Amiga owners should send stuff to **BOB WADE** at the same address.*

TAKING SIDES

Why is it that all software houses produce ST software on single-sided disks which can only handle a pathetic 360Kb? STs with double-sided drives started to be produced nearly two years ago and are standard in whatever ST is purchased nowadays. Double-sided disks can easily be formatted to boot files using a format programme as they in the hell don't software houses do something about this? ST owners with single-sided drives are in a minority now, and less is it annoying, to keep having to swap disks in between games. Do come on all you software houses: take note and keep up with the times.

Michael Robinson
Sough, Barks.

CLONES PAST

I am after back issues of ST Amiga Format namely 5, 9 and 10. Are these available?

G.J. Bux
Ward, Essex.

Most back issues of Format are still available, but check first on 0458 74611. Send a cheque for £2.95 made payable to Future Publishing to Format Back Issues, Future Publishing, The Old Barn, Dartington, Somerset TA11 7DP.

BOTTOM PRICE PLEASE

When I read the review of Eureka Sketch in ST Amiga Format 11 I was inspired to make my own pack! I got in next to a pound.



It is real and very expensive work - but you can make your very own, Mike Parker writes.

It really worked, eventually! Few people have the skill to make a game, but a home made pack is

but an old rule and some sticky tape early from anyone.

Take an old plastic ruler and use it off a couple of centimetres from the end. Draw a cross on the ruler with black felt pen and stick it to the back of your mouse with the tape... and that's it!

The pack can then be used to trace a line drawing from paper to the screen, using a paint package. Though it's not fantastically accurate it's much easier than by hand. You'll find that your drawings will be squashed on screen, but this can be rectified if you have a zoom function in your paint package (adding 4 to Eureka Disk). And there you have it, or rather you don't until you make it, as Barry Norman might say.

Wow, I would like to know why in Format's new image, everybody in the Format team except you, has a mug shot at the top of their pages. I will buy next month's just to see what a photograph looks like!

Mark Halsey
Blackburn, Lancashire.

No picture of me this month because I don't want to foster a Stalinist personality cult.

MORE FUDGISH

In reply to Marcus Smith's letter Issue 12 I would totally agree that your magazine would be greatly improved by cutting out all the boring rubbish - the games reviews, purely Atari material, and letters like this, and providing more serious stuff, especially for the BASIC programmer. After all, everyone has a 'real' BASIC interpreter whereas C and Assembly (and games) are reserved for the privileged few with bottomless resources.

Seriously though, you are obviously trying to cater for every one (except BASIC programmers) and to continue doing so I suggest you increase your coverage by extending your magazine to at least 100 pages and 12 disks each month, for the same cover price. You might then be able to recover about 10% of what the

Amiga cost 90% of what the ST has to offer!

By the way, my daughter picked up the magazine and said, "Why do they call it 'Stam Amiga'?" Very apt, I thought. Guess which machine I have!

Paul Steiner Pilling
Mickleover, Derby.

Well, as of last month the disk will be packed with Amiga only stuff and the ST won't get a single mention - assuming you're Amiga Format that is.

SPEED STAGES

In your article about assembly language in issue 11 of ST Amiga Format, you made a special point of mentioning the speed of each



■ The good old IBM. You know where you were with a city like this.

instruction. Years ago when I wrote 180 code on the Spectrum I realised that analysing the rate of straight code/looping could lead to faster results and thus bought the Z80 Reference Guide by Ian Tully (published by Nelson House). This book lists all the instructions and their relative speeds.

When the new Apple II came out in 1978 I noted that they had added the 6500 version of this invaluable reference book to their stock. Unfortunately, after waiting three months, I still hadn't received a copy and so I got my money back.

Getting back to the point, do you know where I can get a copy of the 6500 version of this book? If not, can you recommend a good



look that lets the clock cycle
lines for each instruction?
M.B. Sherdley-Coxley
Harpend, Lancs.

Any bookshop will be able to
order it for you if you know the
full title.

IBM AM 1500T

If you give a prize to your most
1500T readers, I think I would be
one of the possible winners.

I've been interested in com-
puters for a long time, mainly to
make music with them. Recently I
changed job and decided to buy
one. And I, who always thought of
buying an IBM, bought a PC com-
puter. I have to take work home
and at work they use IBM's. Ever
since that day I have regretted it.
Everywhere I look, Alan makes
MOS seem it's almost impossible
to find anything else at a reasonable
price. That's why I finally decided
to ask you, do you know of any
program that enables me to run
IBM programs on my Philips M80
511T?

Yes, of course I could buy an
IBM - but my PC took two years to
use for.

William Vanden Ende
Brugem,

Some old chap, you're a bit
stuck. The only way to run Alan
programs on the PC would be to
buy a 528000 co-processor card,
and even then I doubt it
would work with a MIDI interface.
And it would cost several times
the price of an ST. Get saving
again.

GIMME A FIX

It's not going to bother to tell you
about how wonderful you are
because you probably all ready
know. Instead I'll get right to the
point. About a month ago I was
editing in a little creative word
editor when my figure
decided to play by himself.

He went right to the top left-
hand corner of the screen and
started there, being most quite
lovely. I handled my ST off and on
again and released. The same
thing happened again, but this
time the man continued being but
stayed where he was. This hap-
pened an and off for about a
month and I put up with it.

Today, however, I was work-
ing when OEM and the pointer
decided to fade in and out and
changed colours every now and
again, then at about 10 seconds
there, it would completely dis-
appear and dock, similar to those
often missing a smaller drive in

The best possible taste?

It is certainly the case that "marketing folk stuck
for a creative idea have always turned to uniquely
sexist messages to sell their products." (*Blow*
Simulation, Format 12).

Considering that this supposedly investigative
feature was littered with bare breasts (the model
could was an extraordinarily high 22, plus a few
near misses), smutty content and uncovered
crushy shots and one rather scouped male (ap-
parently doing the morning, but possibly not, I would like
to make one point).

Magazine folk stuck for a creative idea have
always tended to simplistic sexist images to sell
their products.

Stuart Denney
Swanage, Dorset.

If I want to see pictures of topless women I shall go
to the newspaper and buy a gutter press newspaper
or suitable magazine. I have no wish to see
your publication go the same way as *Amateur*
Photographer. It is all too easy for magazines which
cover male-oriented interests to exploit the female
form - I hesitate to speak up for the women out
there who have Amiga and STs but I dare say they
will have found it offensive and embarrassing.

I wouldn't have minded the pictures if the arti-
cle had been written a bit more carefully. It treated
the matter insensitively and inadequately.
Pornography in computer games is to be taken no
less seriously than in other media.

Andrew Johnson
Aspley, Nottingham

Sex should be dealt with openly as, better a very
human and natural activity. My guess is the way you
presented the subject.

First the cover. A picture of Kim Basinger in
ST/OF clothes with all the connotations of kinky sex
(yes I have seen the film and found it distasteful,
although I was wrong). The cover disk was care-
fully positioned to make you think there might be a
nipple underneath.

Trade things did not improve. The nudgy-nudgy
week-end test was almost allowed out by censors
amounts of female fear.

the circles which stayed these
selves. So I turned it off and on
again and whilst double-clicking on
a disk icon the pointer stayed
where it was and a blurring
started, made like when you press
a wrong key, arose from the com-
puter. Then there was silence and
I could not get the pointer to op-
erate again. I turned the computer
off and on again and the same
thing happened again and again.

You may be able to tell I'm in
a bit of a spot and some direction
from you would help a lot.

James Davis
Plymouth, Devon.

After consultation with our tech-
nician experts we have come to the

conclusion that your machine is
"broken". Our advice is take it to
your nearest computer dealer
and offer them money if they
return it to life.

A MAN OF MARLBOROUGH

I do not usually write in to mag-
azines but there was a comment in
issue 11 from H D Biddle from
Hull commenting on faulty cover
disk.

I have been a subscriber to
ST Amiga Format for 12 months,
since the magazine first let the
sheets, and in all that time I have
only had one disk that did not
work.

This I sent back straight away



Kim Basinger "knowing".

The debate about erotica vs. porn is a difficult
and sensitive one. As respondent magazine you
have a role to play in this. Come on let's have some
serious debate on the issue.

Garrett Ryan
Luton, Beds.

It's impossible to deal with a subject like pornography
without offending anybody, and we apologise if
you were. But the subject is an important one
and needed to be brought out for debate. There
are published the article Channel 4, the Sunday
Times and I'll have at followed it up.

There is a lot of very handsome porn out there
on disk. The best is to go to great lengths to find any
page three type material which we could use -
the cleaners were rather shocked by the cutting
room floor. This illegal material is widely distrib-
uted and among under age computer users the prob-
lem is almost completely ignored. Hopefully our
article might have made some people more aware
of the extent of it.

I'm not going to get involved in the
prosecution argument, the issue is very sensitive
and people of differing opinions seldom come to
any settlement.

I will, however, mildly suggest that any
future material any letters from female readers.

and had a replacement in my
hands within a week, so I do not
see that this is a great problem.

I think that if the programs on
the cover disk were valued in cash
we would most certainly have very
good value for our money. The
only thing that I think might be of
some use in the future within your
magazine would be a helpline.

PJ McElroy
Harlech, Gwynedd.

You need technical help? Write to
Desktop or Workbench for the
best advice money-can buy.

CELEBRITY COCK-UP

As one of the oldest STP bureau
catering specifically for the ST, I



most interested to read your review of Calamus. We have been testing the product over a number of months, and I have to say that it simply offers the best cut out for a \$3,995 (\$4,199) that I have seen from any DTP software, regardless of the machine.



■ Calamus features shortcuts.

But Mark Higgins is wrong when he states that "Calamus offers a very limited number of keyboard shortcuts." You can easily write your own. Inside the SYC folder is a file called CALAMUS.HLP. There, all the menu functions and icons are explained in table form, and can be edited in any text editor. All that is required for a keyboard shortcut is to add a space and any character, and that function will be available from the alternate key plus the designated character. So now, for example, I can call up the rules and change the units from centimeters to inches with just two keystrokes.

Also, as I understand it, the

UK release of Calamus will include PostScript facilities.
John C. Nuttall
InterMedia, Farnham.

MR. ANGRY

I am angry. You have made me angry. I quote from Annual issue 11 page 7, "Yes I know it said playable on the screen, on the disk later, in the contents and in the disk pages (several times). Up. We swapped up."

What do I see on the cover of issue 11? "Playable: demos on disk". What do I see on page seven? "Playable: demos of both our Format Gold games. On the ST you there's two levels of the amazingly addictive Archipelago" in the contents? "Archipelago - playable demo of Logotron's Format Gold game".

Have you considered standing for Parliament? You're obviously aimed at many snippets.

David Knight
Northolt, Middle.

A few people had some problems with Archipelago, but those who persevered got it to work eventually. It seems it must be loaded from medium resolution mode.

CALL THE SHIRAZ

I am in a terrible dilemma, and



■ The Amiga. An excellent mine, but on the other hand...

without some good advice will also be looking for a reputation prohibited.

I have passed a CPO464 for several years (both two away is disgust) and have become quite a pretty BASIC programmer in my heady eighties. I have been considering for some time now upgrading to a 16-bit machine, and will have done, hopefully by the end of the year. The Amiga and ST are the two obvious contenders, but I have no idea which one to choose.

I have been reading various

magazines for the past few months trying to gain some insight into the advantages and disadvantages of these computers. I have found ST Amiga Format one of the most helpful in providing such information.

I want to play good, arcade quality games as well as serious programming and wordprocessing. I know that the Amiga has a slight edge over the ST with sound and graphics capabilities, but it does have a rather slow and noisy disk spin along system and the ST does appear more popular on the software scene. So each one appears to have advantages over the other one.

Please help my predicament. I would greatly appreciate a copy and opinion of the real quality advantages of both these machines.

Which ever one I do eventually decide on, I am sure to continue reading your excellent magazine. Keep up the good work.

Daniel Hopkins
Cwmbran, Gwent.

You summed up the case pretty well yourself. Both machines work as advertised. Both have excellent games and great applications software. If graphics and sound are the most important things in your life, try an Amiga, otherwise the bundle of goodies Atari gives away with the ST is a tempting package. The bottom line: if you can't make up your mind, less a risk. You won't go far wrong with either machine.

PC PROBLEMS

I was prompted to write by a pile of letters in issue 11. I am an A-level student with an Apple II+ and have been using the technique of transferring files

Label nutters

A little tip for Nick Catchpole. Before putting on a new label, peel off the backing and then very carefully stick it on your forehead.

Yes, that's right, on your forehead.

Turn the label then stick it on your forehead again. Repeat until the label covers most of its stick.

If you think it's a half idea at least give it a go.

Robert Muller
Preston, Yorks.

Come on, this is a wind up, isn't it?

Nick Catchpole is not the only one who has found difficulty in removing old disk labels. Lutter, Format 12.

I found the solution to the problem is a tin of Ronsseal lighter fluid (spray). The tin even has a switch good to stop it evaporating.

My method is to squirt on sufficient quantity to float over one side of the disk label - on 3.5-inch disks it's easier if you do the noncontact side first. As the petrol soaks in it softens the label adhesive

and allows it to be peeled off.

Metallised labels can still be a little stubborn and having fitted a corner size Ronsseal directly on the underside. From experience I have found it does not damage the media if you are accidentally overgenerous.



If any adhesive remains on the disk it can be cleaned up with a little more petrol and a clean cloth.

Two words of warning. First, strikers (except Ronsseal) is highly flammable. Also it can cause headaches and other symptoms if used in large quantities in confined spaces.

Finally, having removed the old label, have makers' thought of colour-coding their disc collection - red for letters, green for games, etc.

I stock 3.5-inch disk labels in eight different colours, see my advert elsewhere in the magazine for details.

Brian Barton
Goldsmith Systems.

The lengths people will go to to just plug their products!

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FREE FROM SILICA

[illegible]

OF THE CHAIRS (continued) The staff at Kings Group are always very willing to provide more than just chairs.

[illegible]

10845 MONITOR PACK

A300 Computer	£399.99
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TenStar Pack	£229.50
TOTAL RRP:	£999.43
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PACK PRICE	£649

FREE TENSTAR PACK[illegible]

DO YOU OWN AN ARHGA?

the strong support of Bangladeshis and abroad has led to the expansion of its training facilities in response to growing demand for skilled personnel in various non-governmental organizations and in the public sector. Bangladesh's leadership in the development of a female literacy and basic numeracy programme is a significant example of its commitment to social development.

SILICA SHOP:

[illegible]

PLEASE SEND ME FREE LITERATURE ON THE AMIGA

Author(s)	Country	Year
...	...	...

[illegible]



described by L. C. Bowinger for some six months now with the PC at school.

As with everything there is a problem: the two drives on the all-famous machines run at different speeds and so in the long term files can get jammed. I have more had File Allocation Table (FAT) corrupted on the disk after a couple of months of use. The only solution is to reformat the disk either on a PC or using the panel accessory given away on issue 7's disk. You can then copy the files back onto the disk. What? You don't make back ups? Oh dear! When using the disk always keep a backup. Do not use it to store vital information, you'll be asking for trouble.

Also a new note to Sean Curtis, Head ST Aringo Forum every month. He was not the last letter from Northern Ireland, he was the second.

And finally, congratulations on producing the best magazine in the business. I have bought a copy of every issue and treasure them all.

Paul Sneyg
Co. Antrim, Northern Ireland.

SHOPPING LIST

By now I have used my Aringo 500 mainly for games but I have spent some time trying to learn the Aringo DOS. It would not like to use my computer for compiling, printing, and filing various documents.

Could you recommend:

- A suitable printer, one which will operate on a cheap ink



- WordPerfect professional wordprocessing on the Aringo

printer. I have the Star LC10 colour printer but know very little about it.

- A suitable wordprocessor for domestic use, one including a spelling checker and expandable dictionary.

■ A desktop publishing package which I could use for my letter writing needs, but would also allow me and my children to learn about such a package?

P Neal
South Woodford, London

The Star LC10 is an excellent printer, but I would only go for colour if you really need it. The

same money will buy you a better black on white machine. As for wordprocessors, check out Present then Amiga (which we use in our office) and WordPerfect. Both are fully professional packages offering all the features you'll ever need.

FTP is a bit harder - most software is so packed with features that it can take a while to get to grips with. You could do worse than to take a disk of PageStream, reviewed on page 54.

ALL THAT JAZZ

I wonder if you could possibly advise me as to the method of using my Alan 1040 in the production of high-level recordings. I



■ Clever music on the AT.

am a clannetted and not a jazz band. If I am not mistaken it is possible, is it not, to digitise natural sounds and reproduce them through hi-fi equipment?

I am not interested in electronic or artificial sounds and I have microphones. Could you please advise what else do I need to purchase?

L. S. Blunt
Derby

All winners this month



As it's the very last issue of ST Aringo Forum, we're going to give every single one of the authors of letters published this month their very own Forum personal organiser.

Sometimes our generosity takes its breath away. We hope most of you've got a wonderful April/Cynica the cat at you.

But the prize giving doesn't stop this month. The writer of the best letter published each issue in both ST Forum and Aringo Forum will receive a top-

prize of £100. We have a £100 reward for exactly what it will be yet, but not scored. It'll be good.

While in both ST Forum and Aringo Forum at 4 Queen Street, both B4 1LJ, we reserve the right to hack your letters in sheets if the fancy takes us. And we can't answer correspondence except in print - busy, busy, busy!

You'll need a digitiser, like the one we described in issue 11, and some sound sampling software like Reply from that issue's disk. But don't expect ready professional results. The sampling frequency and computing hardware aren't up to CD quality audio - but it'll give you an idea of what can be done.

Format cover disks would work on the Aringo after being saved in the ST and vice versa without affecting any of the files on the disk.

Nick Goughan
Stockport, Cheshire

The cover disks should work fine in an Aringo after being saved in an ST providing that you don't write anything to the disk.

The peculiar disk format we use stores some of the Aringo information in disk space while the ST thinks it seems and vice versa, so it tends to get somewhat lost if you save onto the disk. It's good reason to back it up.

CONTINENTAL TRAVELS

I own an Atari ST and am slowly going, on a holiday to West Germany where a friend of mine owns an Aringo.

I was wondering if the

See me after

I was wondering who to send this letter to, maybe PC Plus, or perhaps Computer Shopper, but then I thought again. I read ST Aringo Forum so I might as well send it to them.

Yours it all happened just before the Easter holidays at my school in a small seaside town of Croydon in Scotland. A couple of friends and I were marking about on the school's Aringo. One PC-mad friend when all of a sudden I came up with this great idea to teach myself some PC machine code. My two friends who are friends in all things PC should be able to give me some of a .COM file and I was impressed. Well I don't think PCs could do that for me, being a bit idiotic. I suggested we made a longer message along the lines of 'HELLO MY NAME IS [NAME] I HAVE BEEN INFECTED WITH A VIRUS. OH, BY THE WAY DON'T TOUCH THE HARD-DISK!'

Just then the physics teacher walked in. My two friends were subsequently booted out of the computer room. Out down in the prize of our last year, well, last two months.

That, however wasn't the best of it, oh no. We were called back to the computer room to explain our actions.

The teacher typed the file out. He wouldn't run it. He then found the message, and deleted the program from the disk and saved, quite sensibly. What's all this behind of this could not be the school virus program after the message - how can I be sure that it is not?

The truth of the matter is, all we wrote was a program which prints a message on screen, after written in machine code. It was a PDPRT statement, and since when was it bad news to type in:

10 PRINT "HI I'M THE Virus"
20 END

I hope that you print this letter, not for fame and fortune! But just to prove that people in authority are not always right.

Sean Kelly
Croydon, Surrey

Very old chap, but I'm with the teacher.

He had no way of knowing if it was a virus or not - it certainly looked like one, and even you obviously thought it was. Assuming it was a file virus it's reasonable to assume that if you had the technical know-how you'd find it funny to write a real one.

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DON'T MISS AMIGA FORMAT NEXT MONTH

IN A NEWSAGENT NEAR YOU ON
THURSDAY 13TH OF JULY

Among the many features packed into the bubbling launch issue you'll find:

VIDEO TYRLING

An overview of what you can do with a portable, video recorder, video camera and the right software. Plus a look at how Lincorder from Alternative Image will use Amiga AZ600s to produce corporate promotional videos.

COMMODORE PERSPECTIVE

Dr Raimund Hübner, Commodore's technical support manager, gives his view of the Amiga in the future. Hübner reckons there hasn't been a game written that shows off the Amiga's true capabilities.

ADDED ON TEST

Exclusive look at Commodore's forthcoming super Amiga. Boasting 68020 processor, enhanced chip set, 40MB hard disk, 2Mb RAM, Kickstart 1.4... it's a real power machine.

HOT SHOTS

The Amiga Format team, which consists, mostly of the award-winning ex-602 crew, gives its opinion of what are the best 10 Amiga games to date.

PLUS

500+ of games, demos and utilities on disk, reviews of the latest music and graphics packages, pages and pages of the latest games and some fabulous competitions. All this for £2.95! Don't miss the action.



LOOK OUT FOR ST FORMAT NEXT MONTH

IN A NEWSAGENT NEAR YOU ON
THURSDAY 20TH OF JULY

Looking for position in the thriving first issue editor:

THE STAFF STORY

An insight into Atari past, present and future. Including a look at the reactions of the moment - the laptop ST and Mega 1. There's also the Atari Show which promises many surprises.

EVERETT NIGHT

Machines that go bump in the night! Fantasy? Or does it really happen? Possessed silicon - a special investigation into unexplained computer phenomena.

DIY PROJECT

Build a device to display exactly

what your disk drive's head is getting up to. A simple project that'll only cost around £15 in parts.

CASSANDRA COMPLEX

Interview with American techno-rock group Cassandra Complex. How and why they use 1040s connected to their musical instruments via MIDI.

PLUS

Over 5000 of demos and utilities on the cover disk, your chance to win spectacular ThunderBride arcade machine prize, the hottest games, graphics, tutorial, more than the States, covers column, new adult comic strip - the issue's alive.

Miss it at your peril



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CHUCKIE EGG II

RELEASED DUE TO PUBLIC DEMAND
GUARANTEED SALMONELLA FREE

LOOK OUT
FOR MORE
RELEASES

(Choosy Egg)

If you have played the classic computer game Chuckie Egg you hardly need an introduction to this "cooking" sequel, which takes us from the hen house to the chocolate Easter egg.

This eggcellent game is guaranteed to be salmonella free on your Amiga, ST or PC machines. It will give hours of entertainment and no matter how many times you unwrap the disc and sample the goodies it will neither make you fat nor rot your teeth!

CHUCKIE EGG II

Available on Atari ST/Amiga/Spectrum/Commodore/Amstrad
soon on PC.

CHUCKIE EGG

Available on Atari ST/Amiga/Spectrum/Commodore/Amstrad
(Also MS-DOS/Chicago/BBG/Electron soon on PC).

Review of Chuckie Egg
by Computer Games Week

Gameplay 90%, Graphics 85%,
Overall 88%



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Bloodwych



**ARGUE! BARTER!
LIE THROUGH
YOUR TEETH!!!**



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As the people of the Bloodwych awake to a new dawn, they find a stranger in their midst - from one of many races he has come. His task: to halt the demon that lies dormant within the Castle of the Bloodwych.

Unification of the Crystals of Sangain will secure the Behemoth in his lair for all eternity. Should they remain separate, then he shall rise to bring darkness into the world.

This unique role-playing fantasy game allows greater interaction with the environment than has ever been seen before. Argue, barter, negotiate - even lie through your teeth! The fully implemented personalities of all the characters in Bloodwych allow a rich style of role-playing that has only been dreamt of.

With one or two player simultaneous mode, this is the game that you've been waiting for. Bloodwych for those that dare!